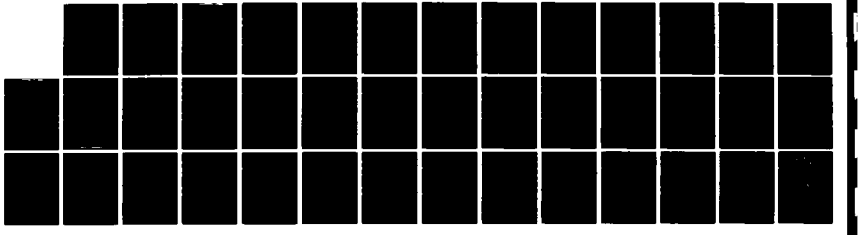
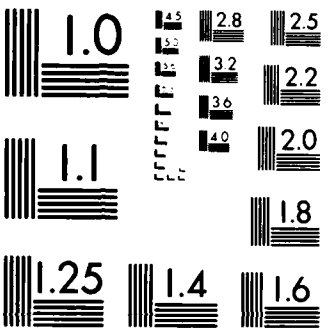
AD-A149 823 INVESTIGATIONS OF MICRO-TURBULENCE IN THE BOTTOM OF THE BOUNDARY LAYER(U) SCHMITT (RAINER) GLASHUTTEN (GERMANY F R) R SCHMITT OCT 84 DAJA45-83-C-0038 1/1

UNCLASSIFIED F/G 4/2 NL





UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER

2. GOVT ACCESSION NO.

3. RECIPIENT'S CATALOG NUMBER

4. TITLE (and Subtitle)

Investigations of Micro-Turbulence in the Bottom of the Boundary Layer

5. TYPE OF REPORT & PERIOD COVERED

Interim
Aug '83 - Oct '84

6. PERFORMING ORG. REPORT NUMBER

7. AUTHOR(s)

Dr. Rainer Schmitt

8. CONTRACT OR GRANT NUMBER(s)

DAJA45-83-C-003R

RFORMING ORGANIZATION NAME AND ADDRESS

Rainer Schmitt
D-6246 Glashutten 1
West Germany

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS

61102A-IT161102-BH57-01

ONTROLLING OFFICE NAME AND ADDRESS

USARDSG-UK
BOX 65, FPO NY 09510

12. REPORT DATE

Oct '84

13. NUMBER OF PAGES

34

IONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)

15. SECURITY CLASS. (of this report)

UNCLASSIFIED

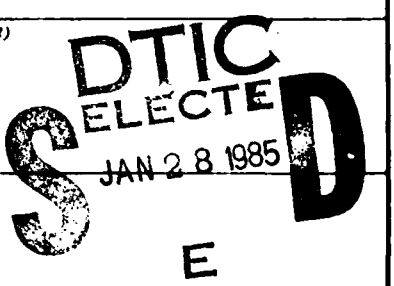
15a. DECLASSIFICATION DOWNGRADING SCHEDULE

AD-A149 823

DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)



18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Boundary layer; micro-turbulence; visibility; optical propagation

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Data representing preliminary first measurements of turbulence are presented, along with parallel meteorological data. Instrumentation problems are discussed, and the computer code for data reduction is provided.

DTIC FILE COPY

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Investigations of Micro-Turbulence in the Bottom of the Boundary Layer

Second Interim Report

Dr. Rainer Schmitt

October 1984

United States Army

London England

CONTRACT NUMBER : DAJA 45-83-C-0038

Dr. Rainer Schmitt

This second interim report deals with the first series of measurements in Western Germany.

The data are presentcd and the weather weather maps are added.

Data-tapes (IBM-9-track) had been sent to White Sands Missile Range, F. EATON, we still expect the information of the readability of the data.

The measuring site in northern Germany had to be changed due to two reasons:

1. one farmer revoked the permission to work on his ground,
2. the area was unsecured at one end of the optical path.

We now have the permission of the port authority of BREMEN-Airport in norhern Germany.

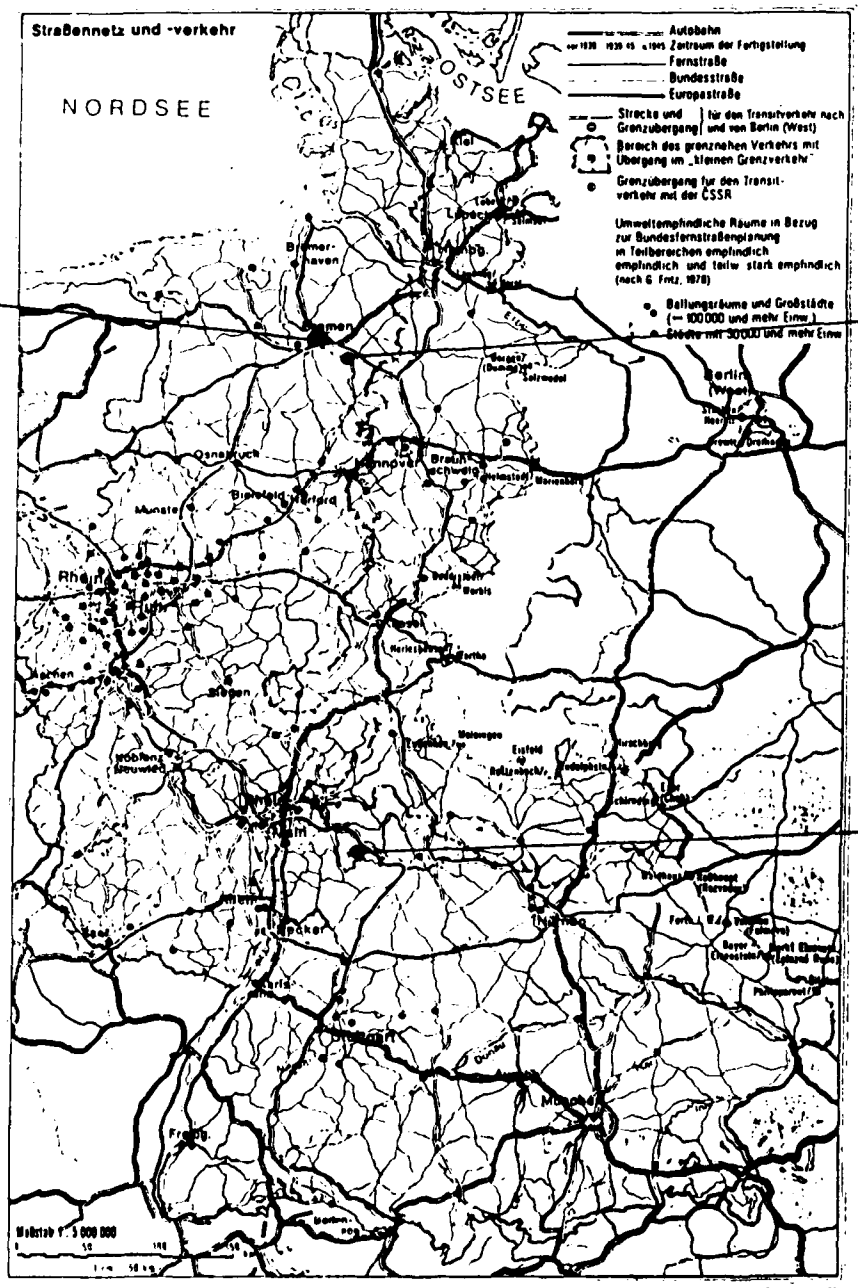
C O N T E N T S

1. Description of the measuring site at BREMEN-air-field

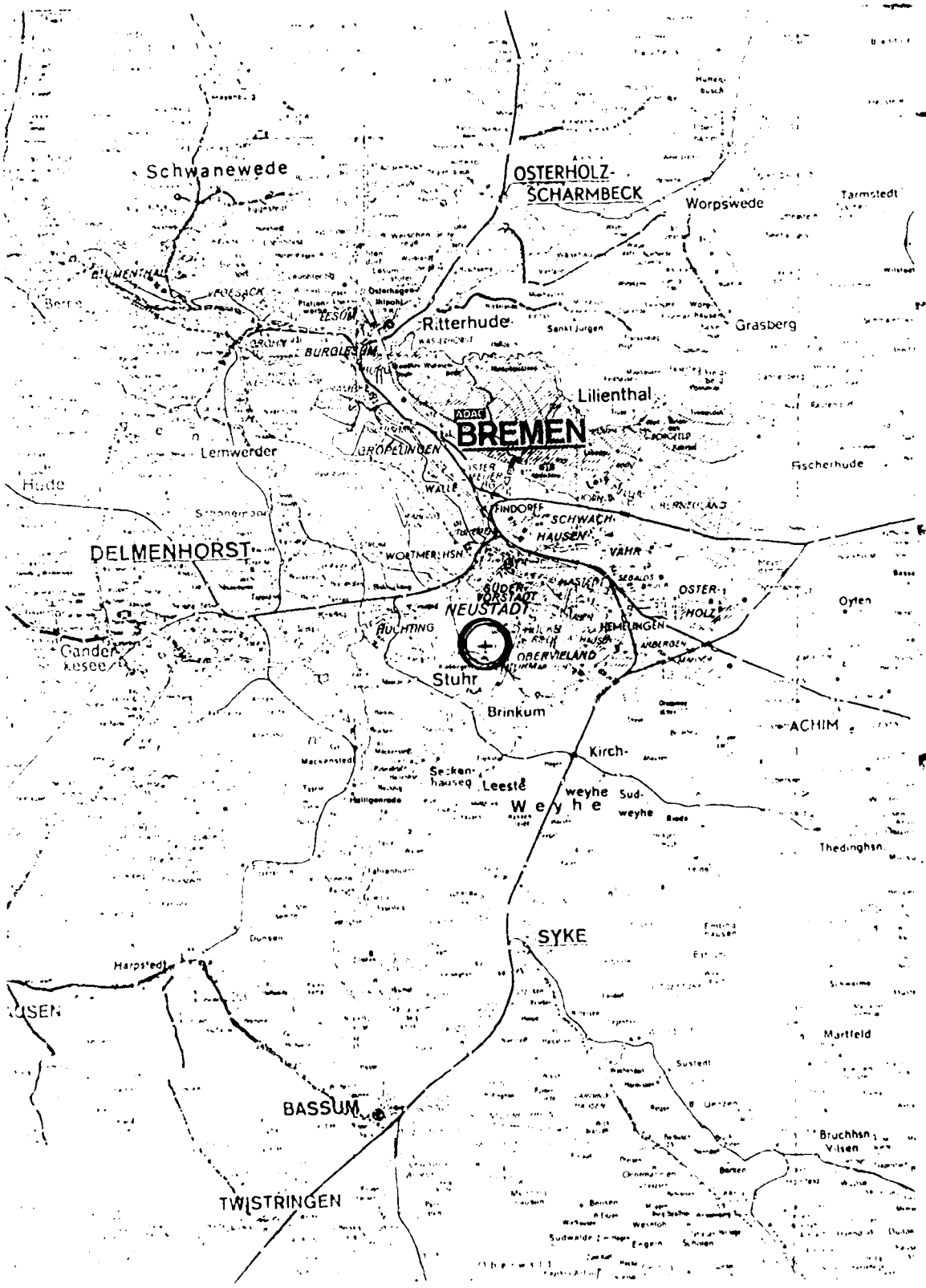
This measuring site is situated about 80 Km north of the first area at VERDEN/Aller. The position of the new and old measuring sites are marked in fig. no. 1. BREMEN is representative for maritime climate.

BREMEN-air-field is a commercial air port with few traffic only (approx. 20 LTO-cycles). The area is completely flat within the first 10 km. Some buildings are situated near the western edge of the measuring site, the area is open to the south and west. The mesauring site itself is flat and grass is growing.

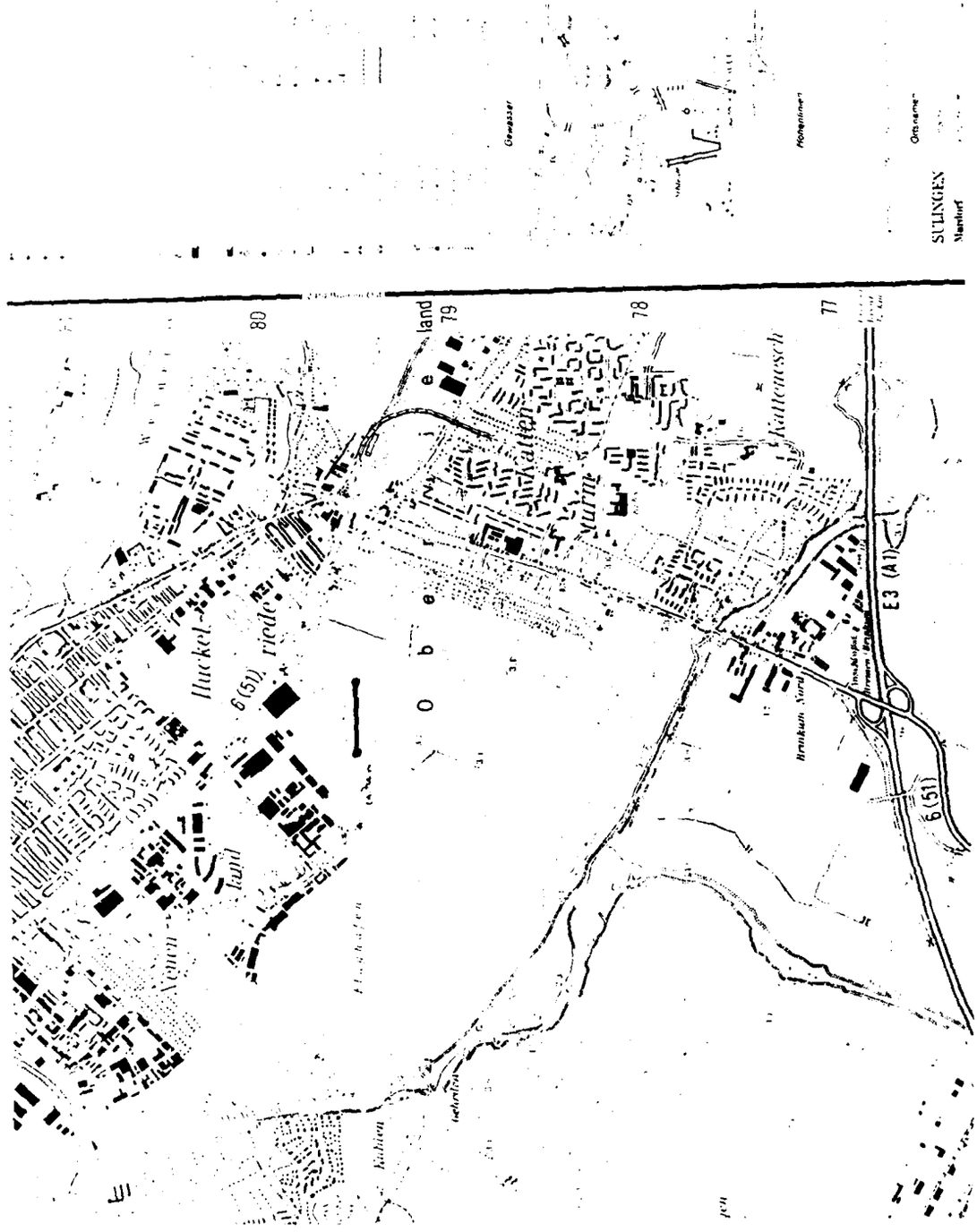
The distance between the light-source and the receiver is 750m. For this new site the measuring equipement had to be powered by batteries completely.



Locations of measurements in West-Germany



Copy
permit fully legible reproduction



2. Technical problems.

There are some problems with the "old" system. It is impossible to allign the instruments: the red control-lamps are in on possition even if the system seems to be alligned perfectly. The lamps are off only if the system seems to be not alligned by some ten meters. But even in this possition the leds go on after some seconds and remain on. The system seems to be influenced by even a slight shock. Our electronic engeneer is ordered to repair the detector-system.

Other technical problems arrise due to condensation of water at the outside of the windows of the instruments or the housing during nights with high humidity in the air. It was not possible to heat the outside of the windows because of the high power consumption of all heatingsystems used. Now we try to prevent condensation by disturbing the boundarylayer using 12-VDC-fans.

In addition to this technical problems, 3 measuring campagnes had to be canceled after setting up the system due to heavy rain or fog (one at BREMEN and two at STEINBACH)

3. Presentation of data.

Table 3.1 gives the description of the IBM-9-track-tape.
Tabel 3.2 gives a complete listing of the 10-second single values of the c2n-signal and the 10-min values of the meteorological data.

Attention: from the temperatur-data a value of 60 has to be subtracted.

wind-speed : m/s
wind-direction : degree
Temperature : deg. celsius +65
Humidity : wet-bulbe temperature deg.celsius+65
radiation ballance: joule/m2

The c2n-data are plotted in Figure 3.1 ff.

Tape-description: one record of 256 bytes are two records of 128 bytes on IBM-Discet / 9 track tape: 1600 bpi, Block 80*80

Each day with measurements is a FILE, RECORD#1 gives the title and the location of the measurement.

RECORD#3 and #4 gives the description of the data-records.

RECORD#3

MXX = sign
JJMMTT yearyearmonthmonthdayday 841001
hhmm hourhourminuteminute 0010

10 - MINUTE - MEAN VALUES OF METEOROLOGICAL PARAMETERS:

DDD wind-direction (deg)
dd.d standard deviation (deg)
VV.V Windspeed
vv.v standard deviation
-TT.T temperature (deg celsius)
tt.t standard deviation
-FF.F wet bulbe tempearure
ff.f standard deviation
-RR.R radiation balance
rr.r standard deviation
hhmm hourhour minuteminute
ssss.....ssss 10-second single values of c2n-signal

RECORD#4

SMM = Signal (c2n)
JJMMTThhmm Year month day hour second
ssss.....ssss c2n-signals until the end of 10 minut intervall

RECORD#6 meteorological signal from second 10-minute intervall and c2n signals
RECORD#7 time and c2n-signals until the end of the second 10-minute intervall
.
.
.
.

RECORD#294 : Last data of the day: 24:00 midnight

4. Meteorological maps.

The weather maps of the two campagnes are attached:
1. Sept. 1. - 5.
2. Oct. 8. - 12.

```
                  1009m2   Record length: 260

             Record # 1
String length: 256
"2.measurement microturb.      SteinbachFRG49500926disturb.. fog
 +++++++++++++++++++++++++++++++++++ +++++++++++++++++++++++++ ++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++"


             Record # 2
String length: 256
"MXXJJMMTThhmmDDDdd.dVV.Vvv.v-TT.Ttt.t-FF.Fff.f-R.RRr.rrhhmmssssssssssssssssssss
sssssssssssssssssssssssssssssssssssssssssssssssssSXXJJMMTThhmmssssssssssssssssss
ssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss
sssssssssssssssss"


             Record # 3
String length: 256
"MM2841009001031417.65.4 1.8  6.8 0     7    0    -.03 0    01  9999999999999999999
99999999999996  6  6  6  6  6  6  6  6  6  6  6  SM284100900106  6  6  6  6  7
6  6  6  6  6  6  6  6  5  5  6  5  5  6  6  5  5  6  6  6  6  6  5  5  6  6  6
 5  6  5  6  ****"


             Record # 4
String length: 256
"MM2841009002030516.85.5 1.6  6.9 0     7.1 0    -.02 0    011 9996  6  6  6  6  6
 6  5  5  5  6  7  6  6  5  6  6  5  5  5  5  6  SM284100900206  6  6  5  5  6
6  6  6  6  5  6  6  6  6  6  6  6  5  6  6  6  5  5  6  6  6  6  5  6  6  6  6
 6  6  6  6  ****"




                  1009m2   Record length: 260

             Record # 144
String length: 256
"MM2841009234032312.52   1.4  10.8.1    10.50    -.08 .02 23319996  6  6  7  6  6
 6  6  6  6  6  7  6  6  7  6  6  6  6  6  6  6  SM284100923406  6  7  6  7  6
6  6  6  6  7  6  6  7  6  7  7  7  7  7  7  6  6  6  7  7  7  7  7  7  7  7  6
 7  7  7  7  ****"


             Record # 145
String length: 256
"MM2841009235032810.61.8 1.5  10.7.1    10.40    -.1  .02 2341999 7  7  7  7  7  7
 7  7  7  7  7  7  7  7  7  7  7  7  7  7  7  6  SM284100923507  7  7  7  7  7
7  7  7  7  7  7  7  7  7  7  7  7  7  6  7  7  7  7  7  6  7  8  8  7  7  7  7
 7  8  7  8  ****"


             Record # 146
String length: 256
"MM2841009240032611.53.1 1.6  10.5.1    10.1.1  -.24 .01 2351999 7  8  8  8  7  7
 8  8  7  8  7  8  7  8  7  7  8  8  8  8  8  8  SM284100924008  8  8  8  8  8
8  8  8  8  9  8  8  9  9  8  8  8  9  8  9  8  8  8  8  8  8  8  8  9  8  8  8
 8  9  8  8  ****"


             Record # 147
EOF
```

```
Record #1:
2.measurement microturb.       SteinbachFRG49500926disturb.. fog
**********************************************

Record #2:
********************************************************************************
**********************************************

Record #3:
MXXXJJMMTThhmmDDDdd.dVV.Vvv.v-TT.Ttt.t-FF.Fff.f-R.RRr.rrhhmmssssssssssssssssss
sssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss

Record #4:
SXXXJJMMTThhmmssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss
sssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss

Record #5:
MM28410110010999999990   0    9.8 .2   9.5 .1  -.14 0   01  99999999999999999999
99999999915 19 15 16 19 18 17 18 17 19 19 15 20

Record #6:
SM28410110010181 19 20 18 19 17 16 17 17 18 21 21 19 20 21 22 18 19 18 17 17 20 1
7 17 15 19 18 14 24 21 20 19 19 19 20 23 18 ****

Record #7:
MM28410110020296 8.8 .1  .4   9.8 .2   9.4 .1  -.14 0   011 99925 23 24 26 25 26
25 29 22 23 24 19 22 24 25 26 26 23 24 23 19 22

Record #8:
SM28410110020211 22 20 22 26 19 20 20 25 19 20 25 21 21 18 20 20 19 26 19 22 17 2
3 17 19 20 22 24 22 20 23 21 26 20 22 19 21 ****

Record #9:
MM28410110030999999990   0    9.9 .2   9.5 .1  -.16 0   021 99921 18 24 18 21 17
19 18 24 19 19 18 20 22 17 19 21 17 17 20 19 19

Record #10:
SM28410110030181 17 18 16 20 20 22 22 20 18 20 18 18 20 20 18 18 19 19 19 22 19 1
7 20 16 16 16 19 18 15 16 16 14 17 15 12 17 ****

Record #11:
MM28410110040999999990   0    9.4 .2   9.2 .1  -.2  .01 031 99918 14 16 17 19 17
18 16 13 18 16 16 20 20 19 19 19 17 18 16 17 17

Record #12:
SM28410110040211 21 20 18 13 17 16 17 19 17 16 16 16 18 20 17 21 16 16 17 23 19 1
7 18 15 17 13 14 17 18 16 18 17 18 19 18 22 ****

Record #13:
MM28410110050999999990   0    8.7 .2   8.8 .1  -.17 .02 041 99915 18 20 18 19 17
18 17 19 20 20 18 21 18 18 19 18 17 14 20 18 17

Record #14:
SM28410110050141 17 16 15120 19 17 17 16 17 17 15 17 16 19 18 15 15 15 19 19 17 1
8 15 19 17 13 17 17 18 18 17 15 19 19 22 23 ****

Record #15:
MM28410110100999999990   0    8.7 .2   8.8 .1  -.08 .01 051 99920 27 16 17 15 19
16 14 17 16 17 17 16 17 16 15 18 14 17 15 14 14

Record #16:
SM28410110100111 14 16 16 17 13322 19 16 19 16 18 17 22 18 19 20 19 22 20 17 19 2
0 18 17 18 21 17 13 16 19 18 16 16 19 18 16 ****
```

99999999924 25 21 23 24 22 23 18 23 22 20 21 23

Record #18:
SM2841011011023 20 19 22 23 20 21 21 22 22 20 22 18 19 21 19 18 21 17 18 19 19 2
0 19 19 18 18 19 21 16 18 19 17 19 17 19 16 ****

Record #19:
MM284101101203008 1.5 1.1 10 .1 9.5 .1 -.17 .01 011199917 17 22 21 19 20
18 19 19 25 21 18 18 21 20 20 17 18 17 17 22 19

Record #20:
SM2841011012020 19 18 20 16 18 21 22 16 18 20 18 19 24 19 20 18 15 16 16 15 19 1
4 19 16 16 17 20 18 17 16 15 15 20 20 17 15 ****

Record #21:
MM284101101303058.3 .2 .6 9.7 .3 9.3 .2 -.21 .01 012199917 20 21 16 14 17
21 20 20 17 18 19 18 21 18 19 17 18 19 21 16 18

Record #22:
SM2841011013017 16 14 18 17 16 20 23 16 18 15 18 17 19 16 16 19 17 22 16 16 15 1
9 19 15 16 18 16 16 16 19 19 16 16 16 19 17 ****

Record #23:
MM2841011014099999990 0 8.7 .3 8.7 .2 -.2 .03 013199916 19 16 21 15 18
18 18 17 19 18 19 24 17 21 18 17 15 18 18 16 21

Record #24:
SM2841011014014 17 13 15 20 14 14 13 14 14 16 15 16 16 22 20 15 16 14 18 15 16 2
0 15 16 18 17 17 22 18 17 15 15 15 15 17 22 ****

Record #25:
MM2841011015099999990 0 8.3 0 8.4 0 -.12 0 014199915 16 19 18 16 21
20 15 15 18 17 15 15 18 15 12 12 12 10 13 11 11

Record #26:
SM2841011015013 10 8 11 10 10 9 9 8 8 7 6 8 8 7 7 7 9 7 8 7 6 8
8 7 7 7 6 8 8 7 8 7 10 10 11 9 ****

Record #27:
MM2841011020099999990 0 8.3 .3 8.3 .2 -.11 0 015199911 9 9 10 11 12
11 13 11 10 10 10 12 11 10 10 9 10 9 11 11 10

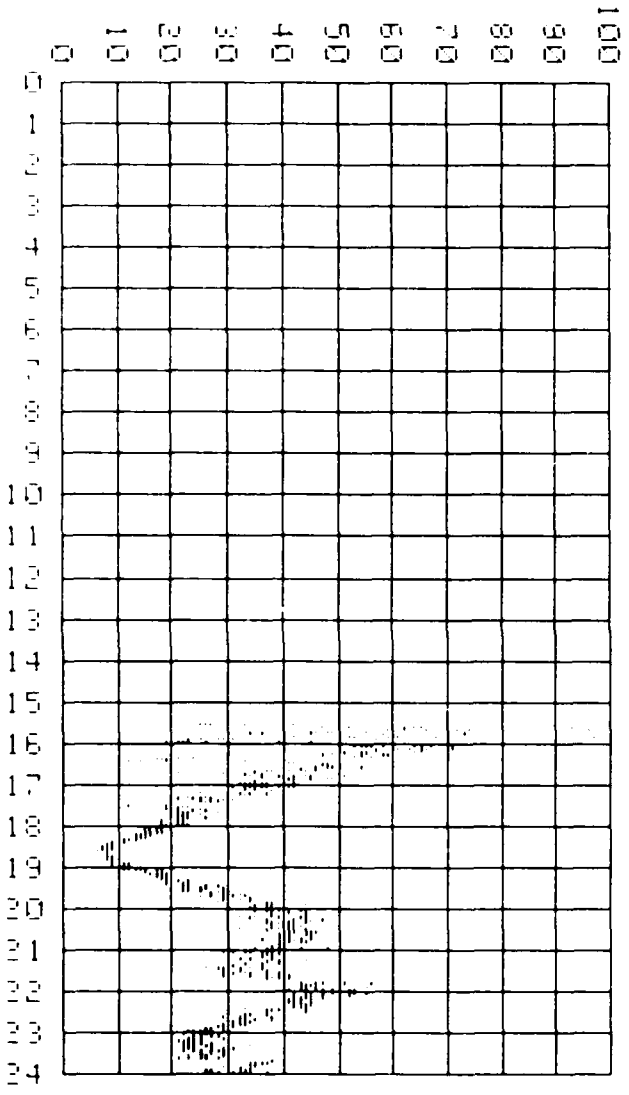
Record #28:
SM2841011020010 9 10 13 10 11 10 11 12 14 13 13 12 16 16 17 15 12 12 13 12 12 1
2 13 12 14 13 12 13 13 13 14 11 13 15 12 11 ****

Record #29:
MM2841011021099999990 0 8.4 .1 8.4 .1 -.15 .02 020199999999999999999999
99999999912 11 11 11 12 11 11 11 9 9 9 9 12

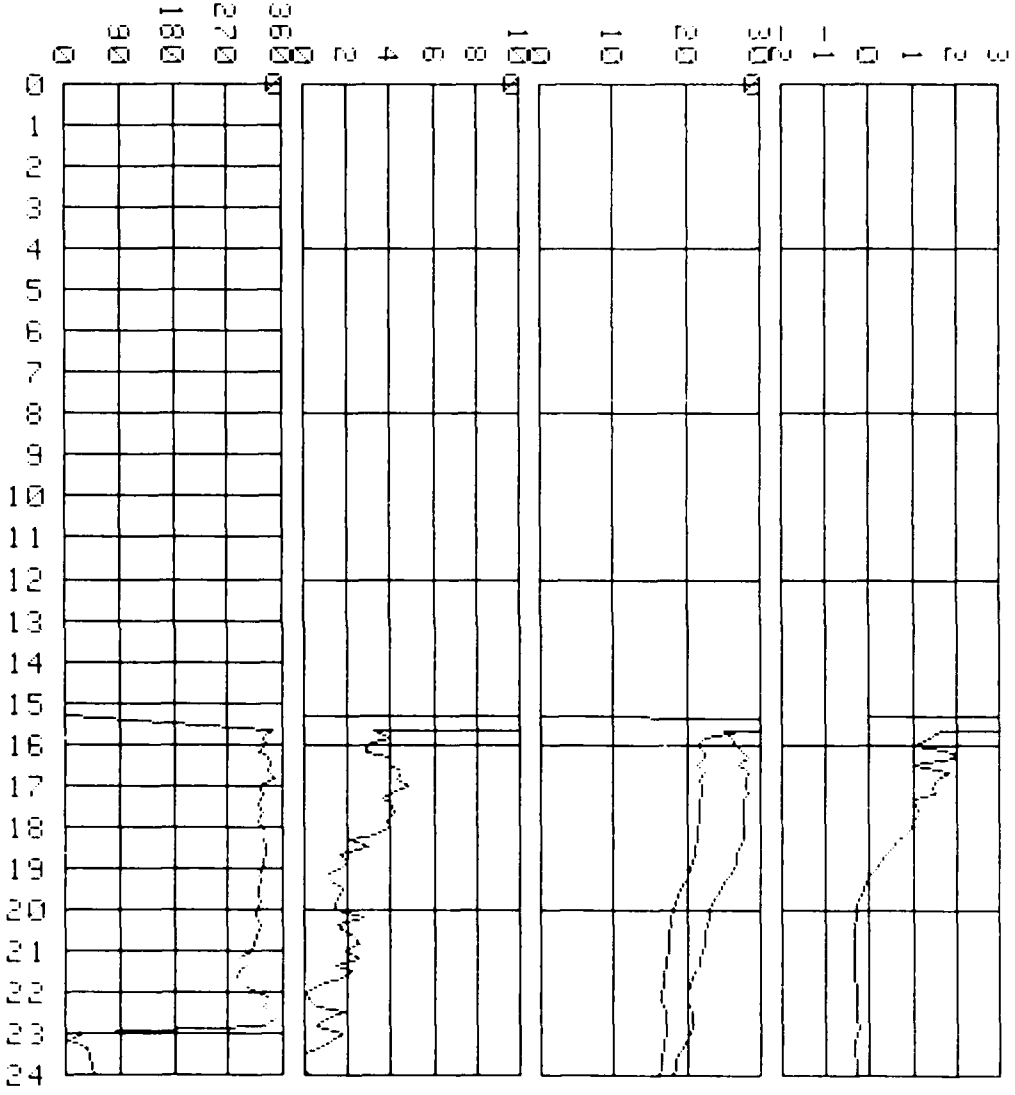
Record #30:
SM284101102109 11 10 14 11 11 9 11 8 7 7 7 7 8 8 8 8 8 7 7 8 8 8
8 8 9 8 9 8 8 7 7 6 6 6 7 7 ****

Record #31:
MM2841011022099999990 0 7.8 .2 8 .1 -.16 0 02119996 7 9 8 8 8
10 12 10 10 10 12 9 8 10 8 8 8 8 7 7 8

Record #32:
SM284101102207 7 7 7 7 6 7 7 7 7 7 6 8 8 7 10 9 8 10 7 8 8 7
9 8 9 10 11 12 11 14 19 17 19 23 19 23 ****



c2n-signal

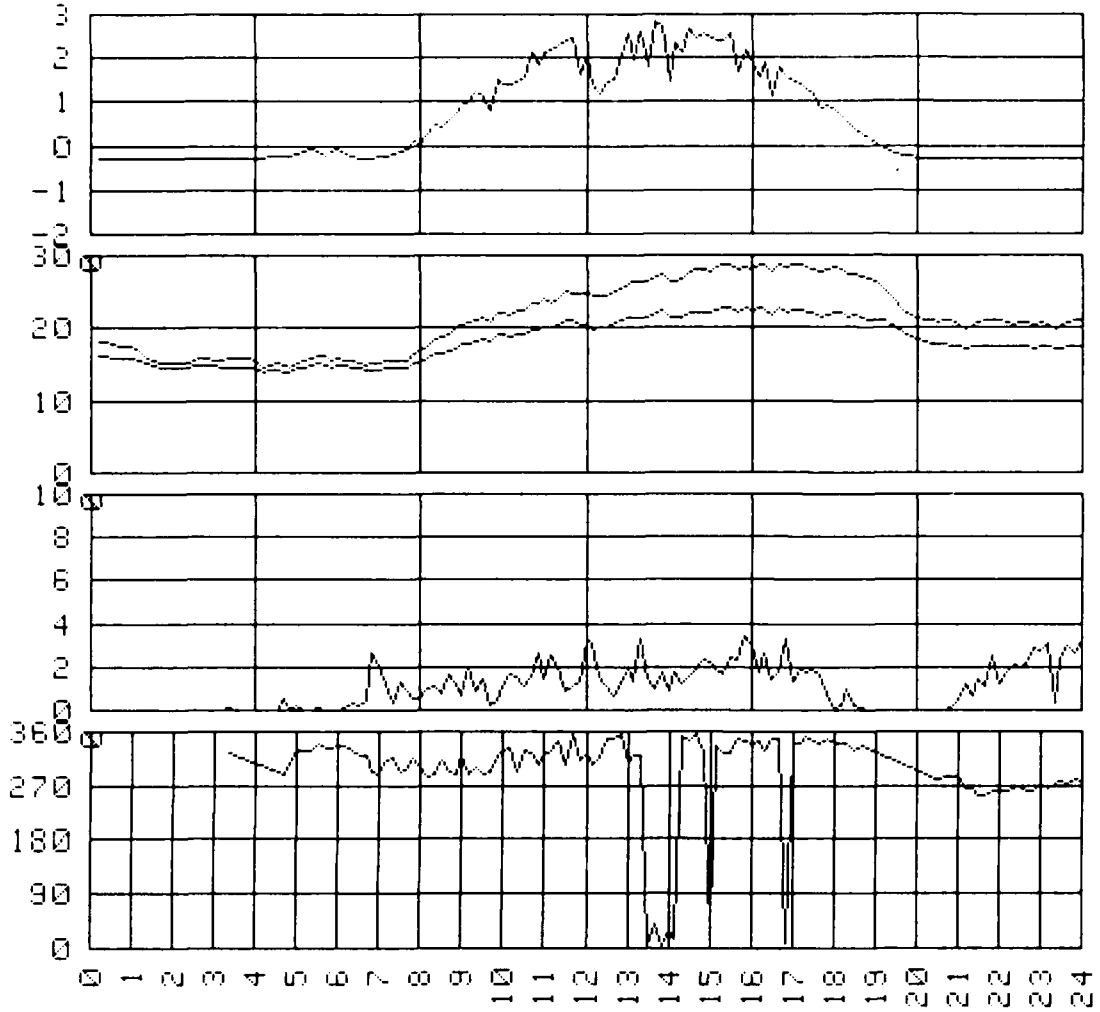


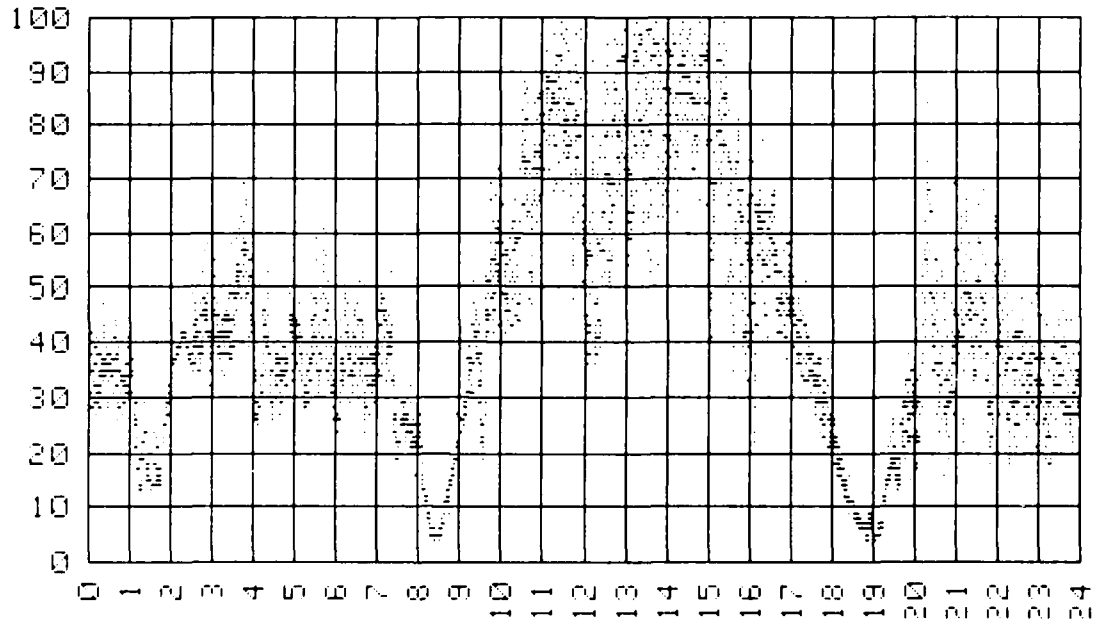
wind-direct. wind-speed temp. (Cels) rad-ballance
wet.bulb.temp.

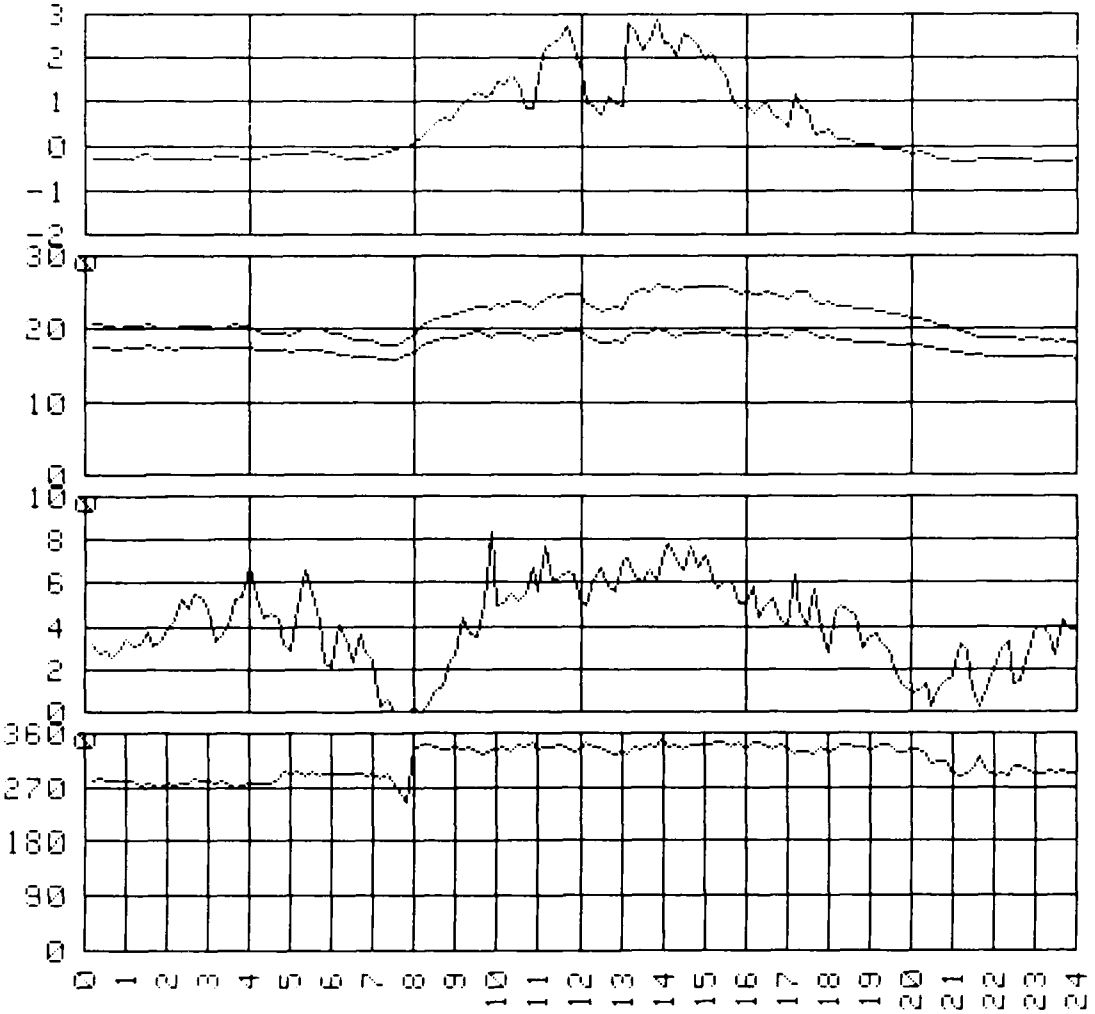
1. Sept. 1989

2. sept

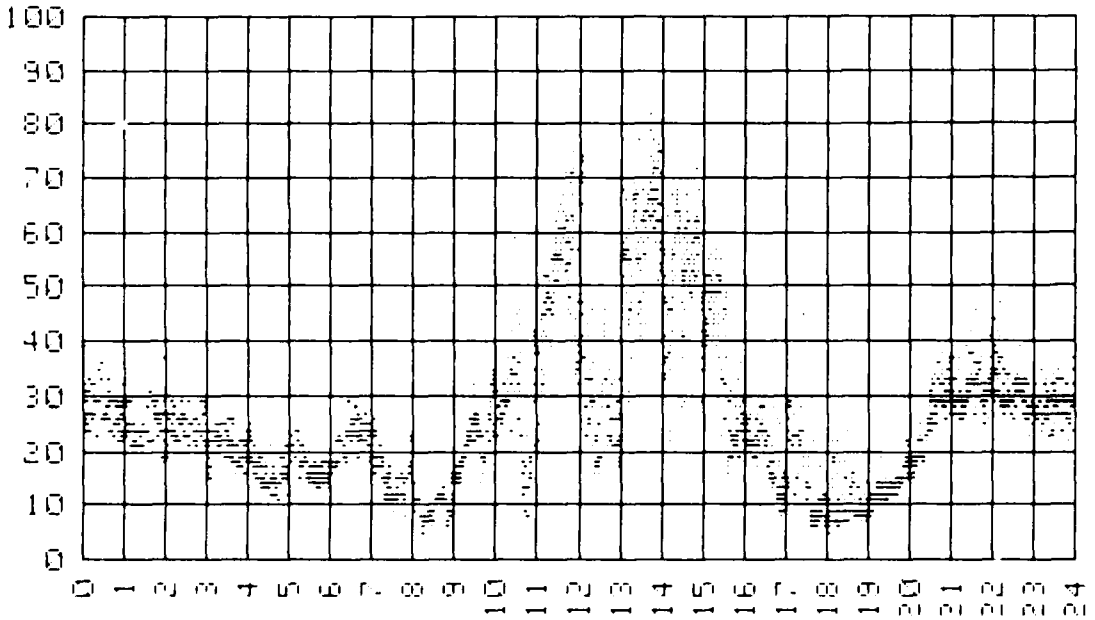
1984

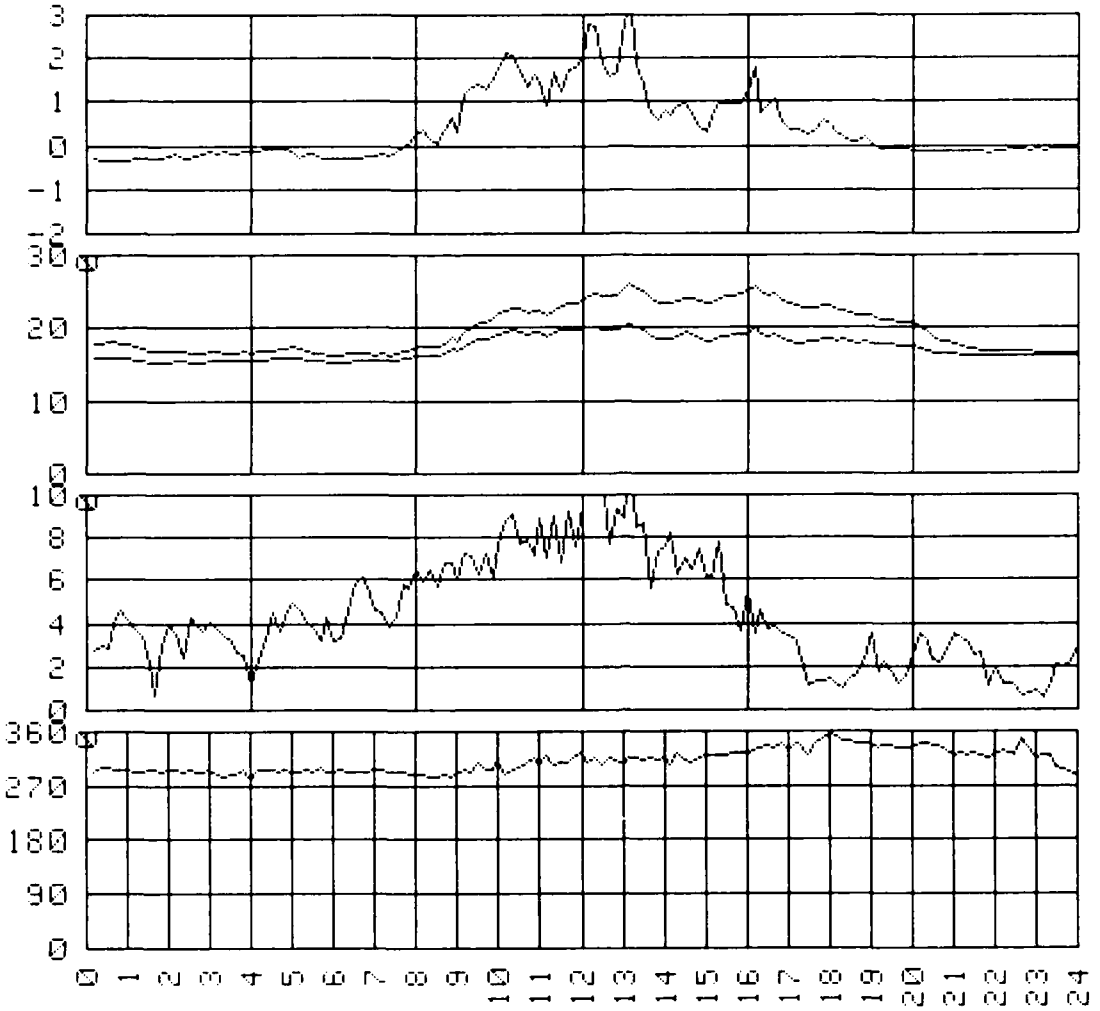

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24


100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

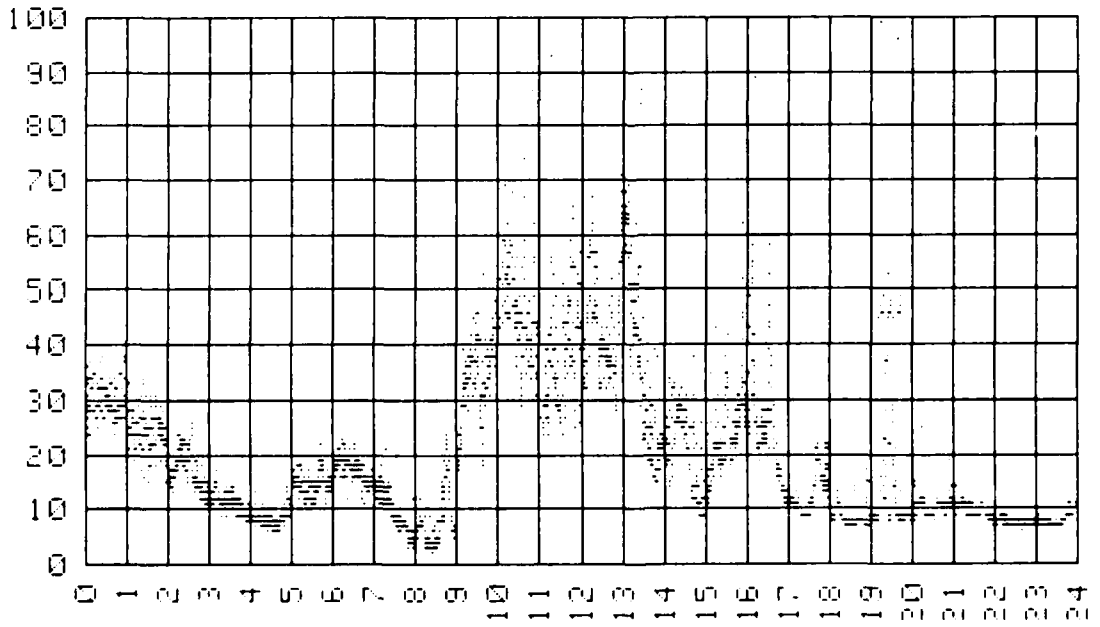

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

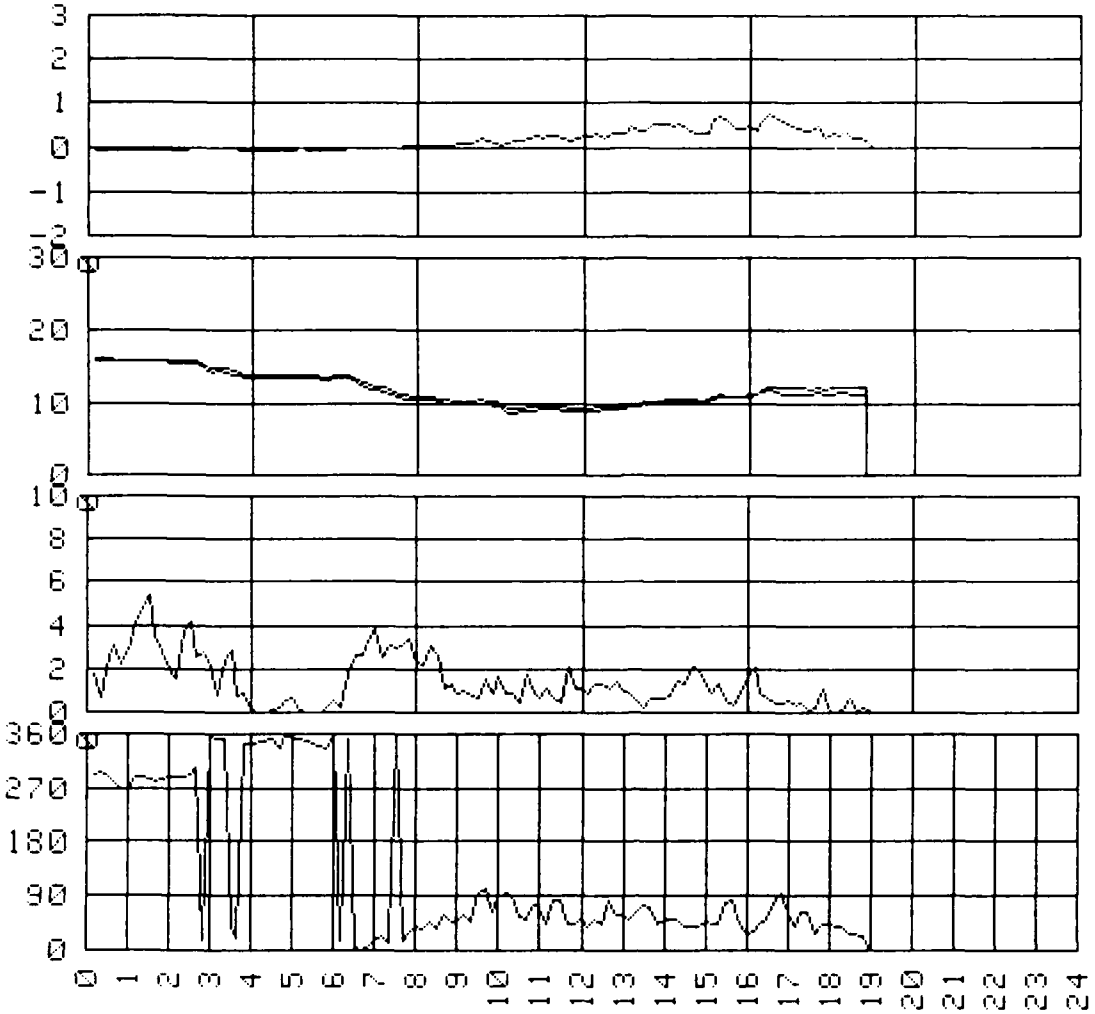
3. Sept 1984


100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

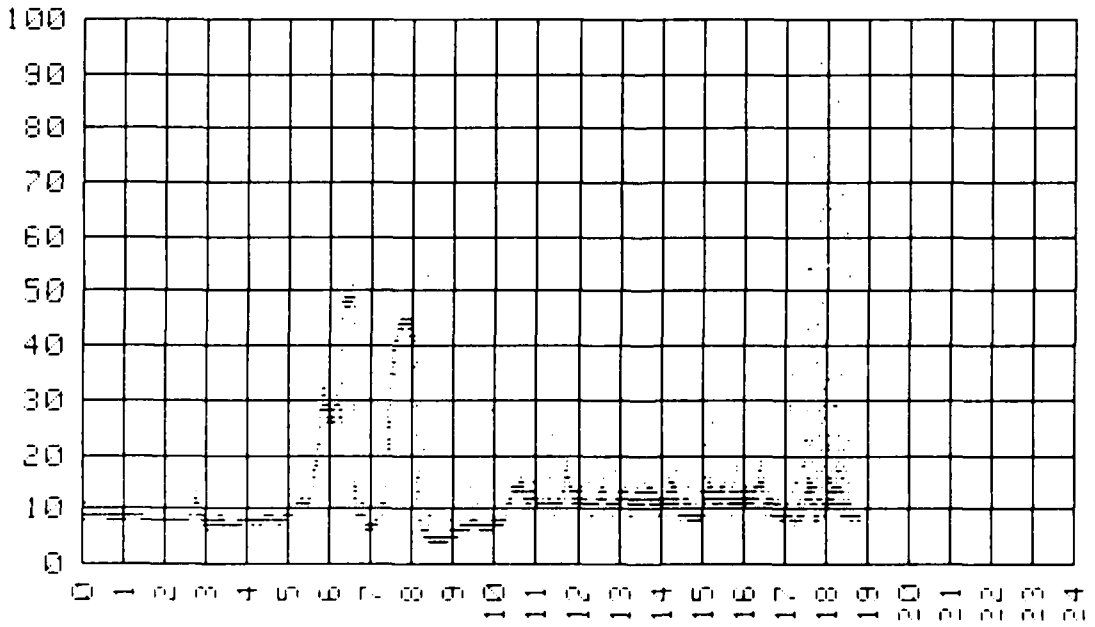

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

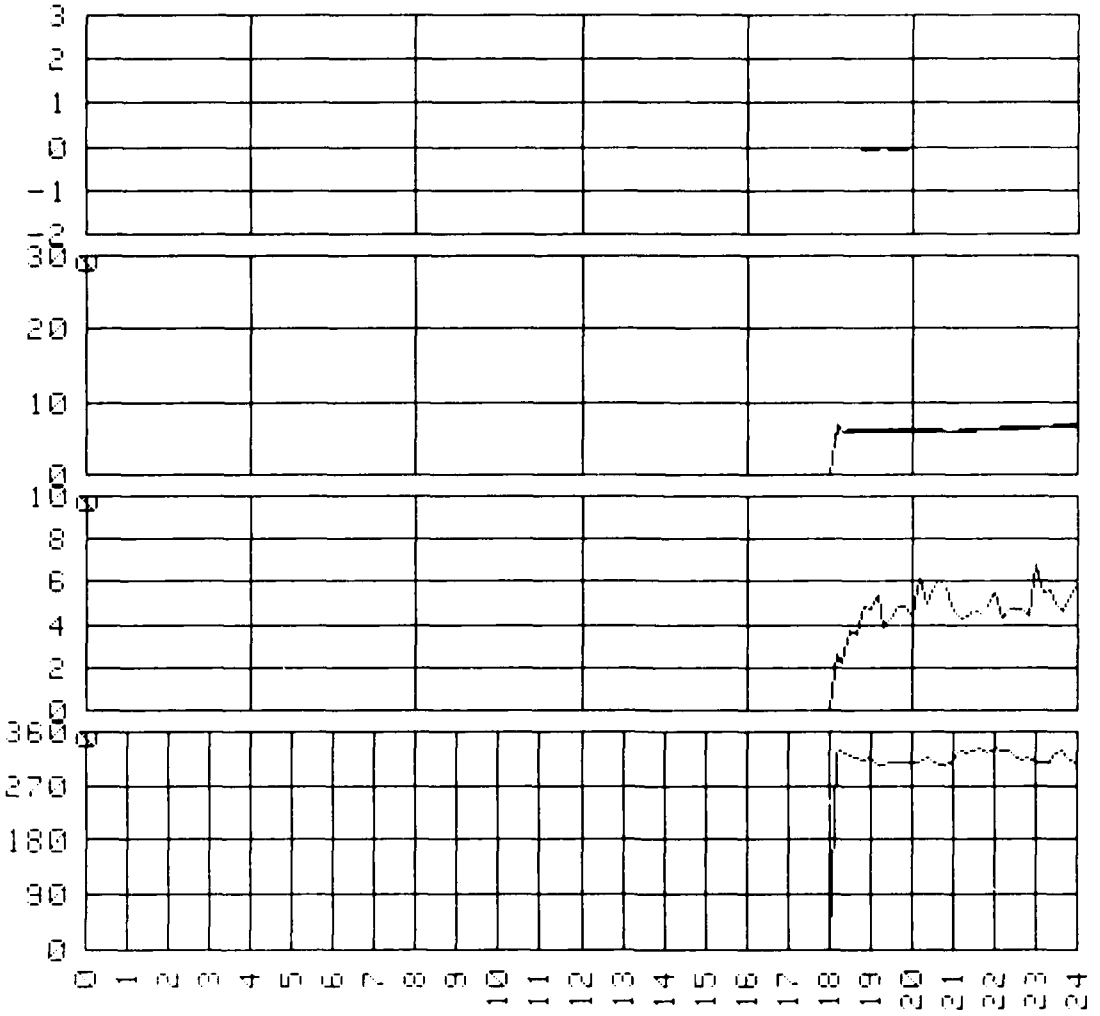
4. Sept 1984


100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

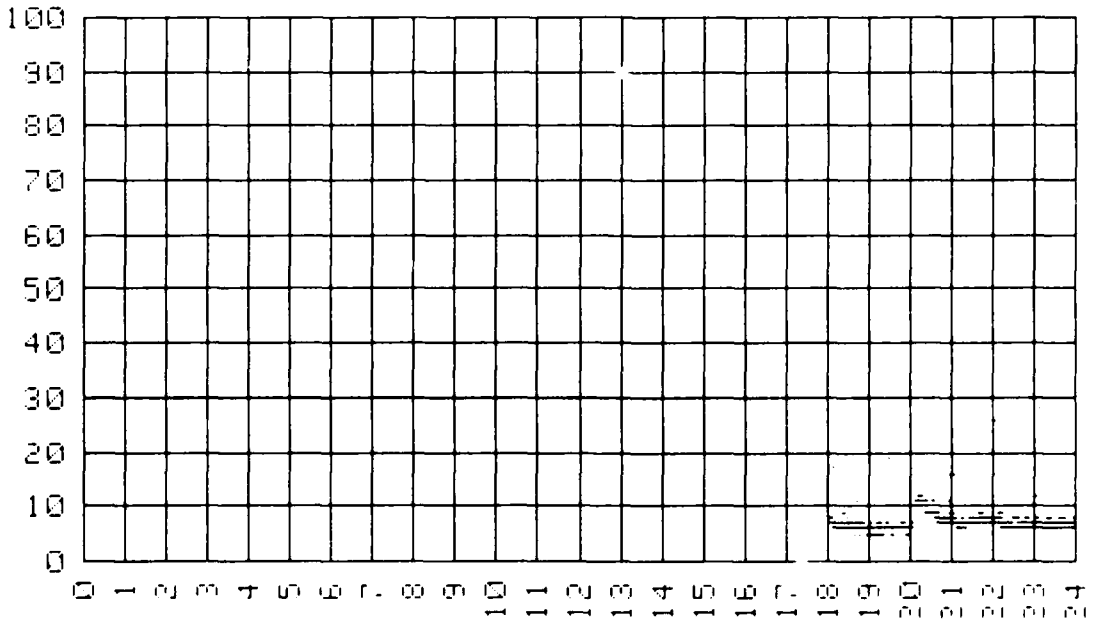

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0

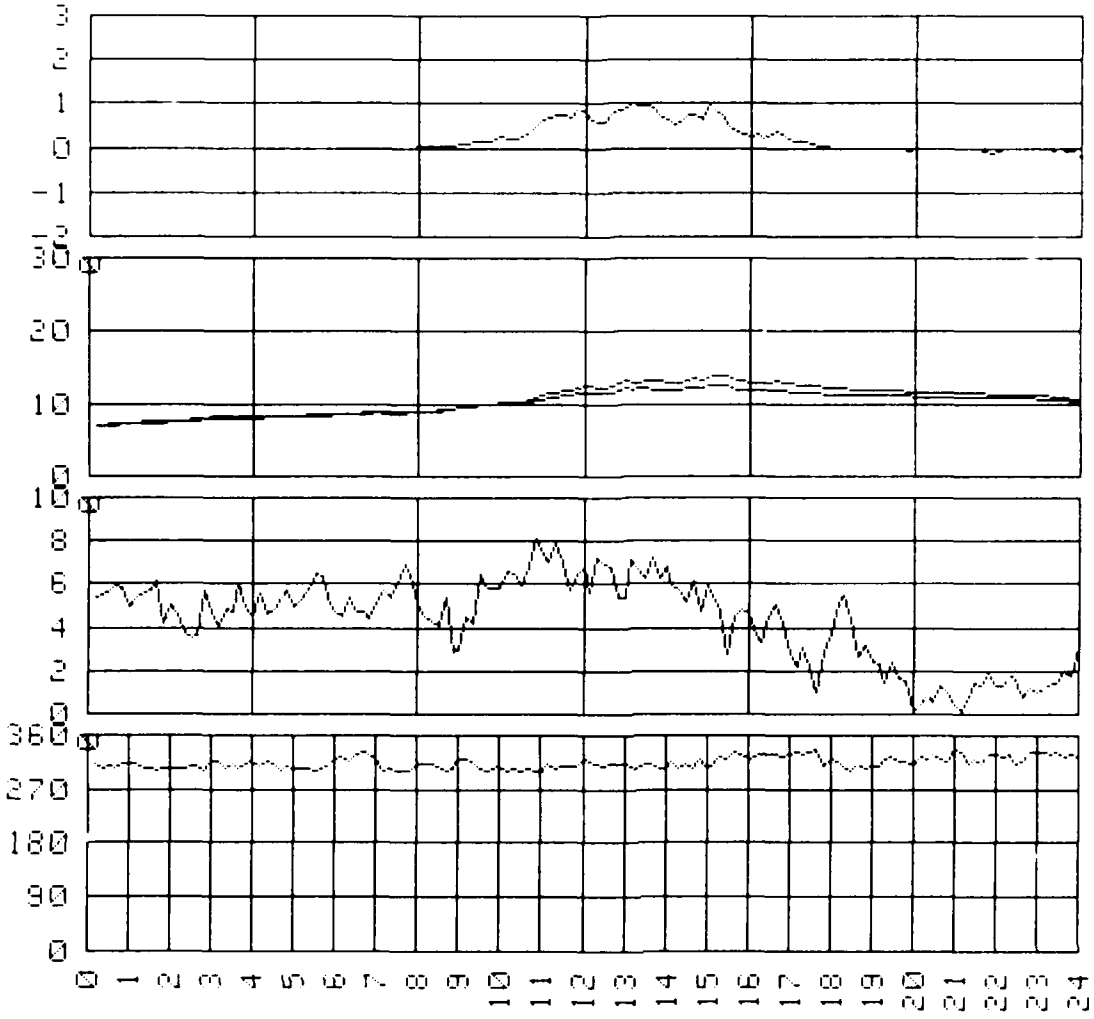
S. Kpt
1984.

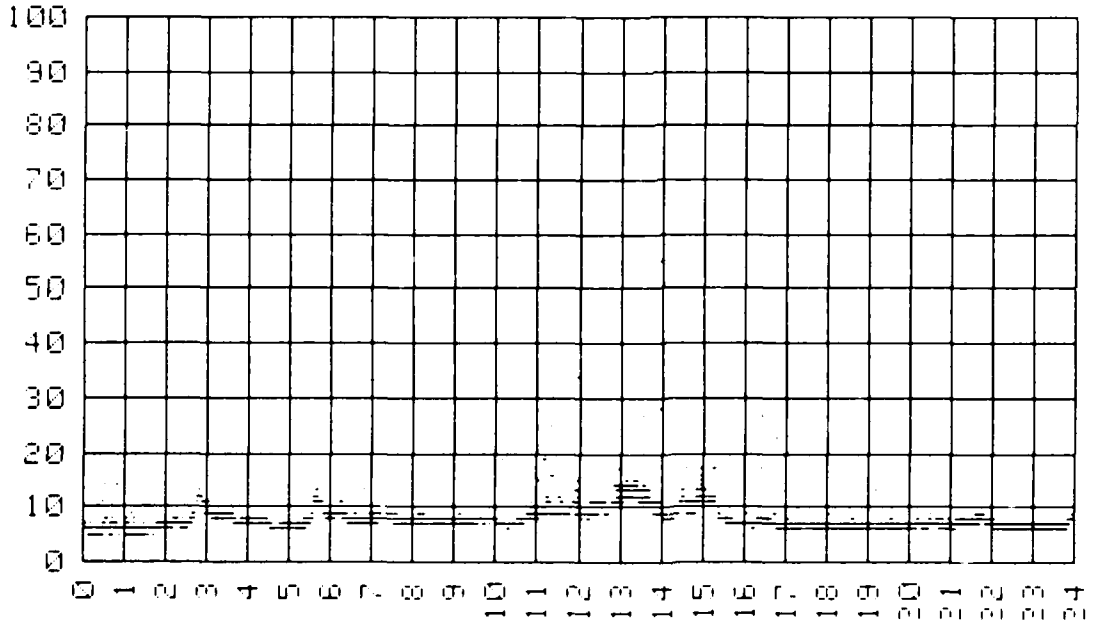

100
90
80
70
60
50
40
30
20
10
0

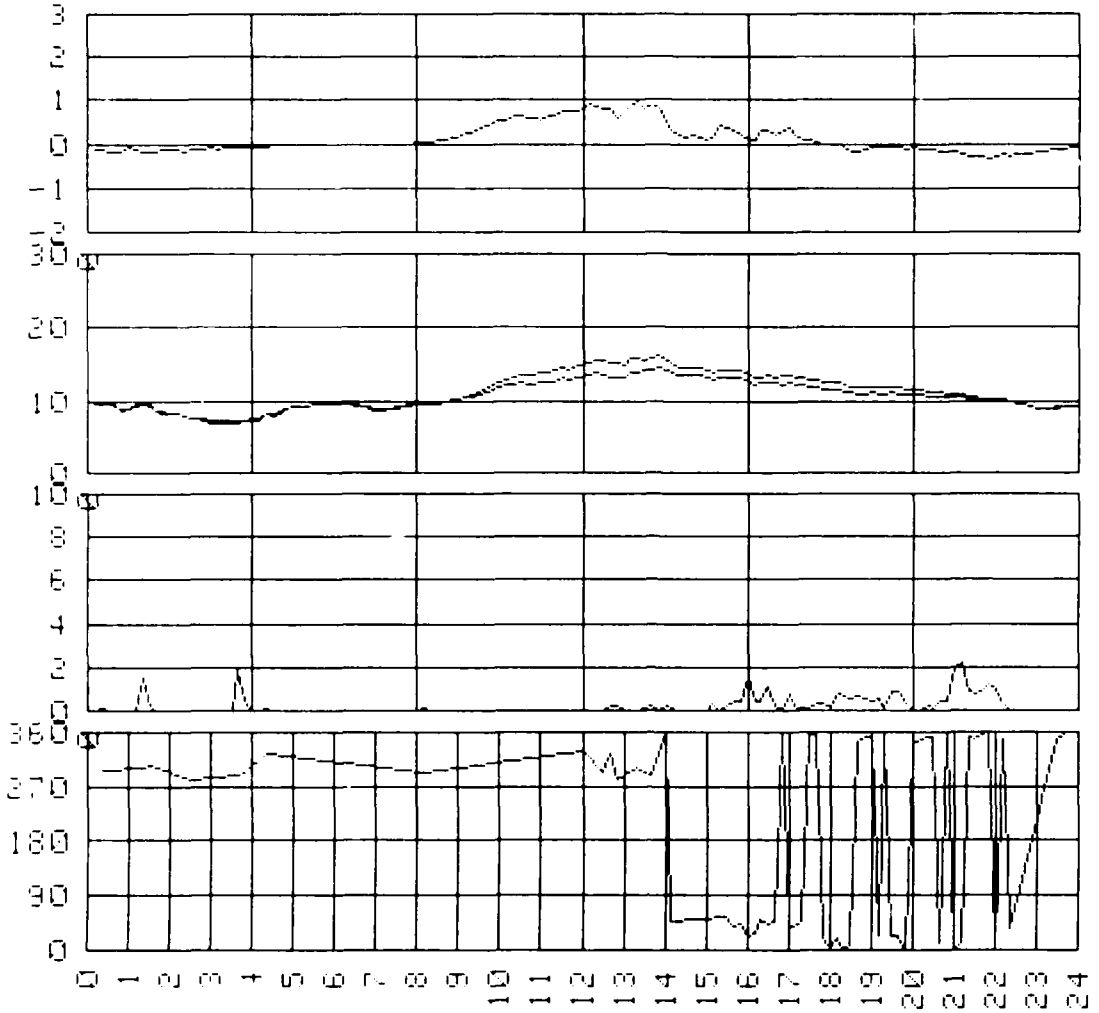

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0

12.oct.1984

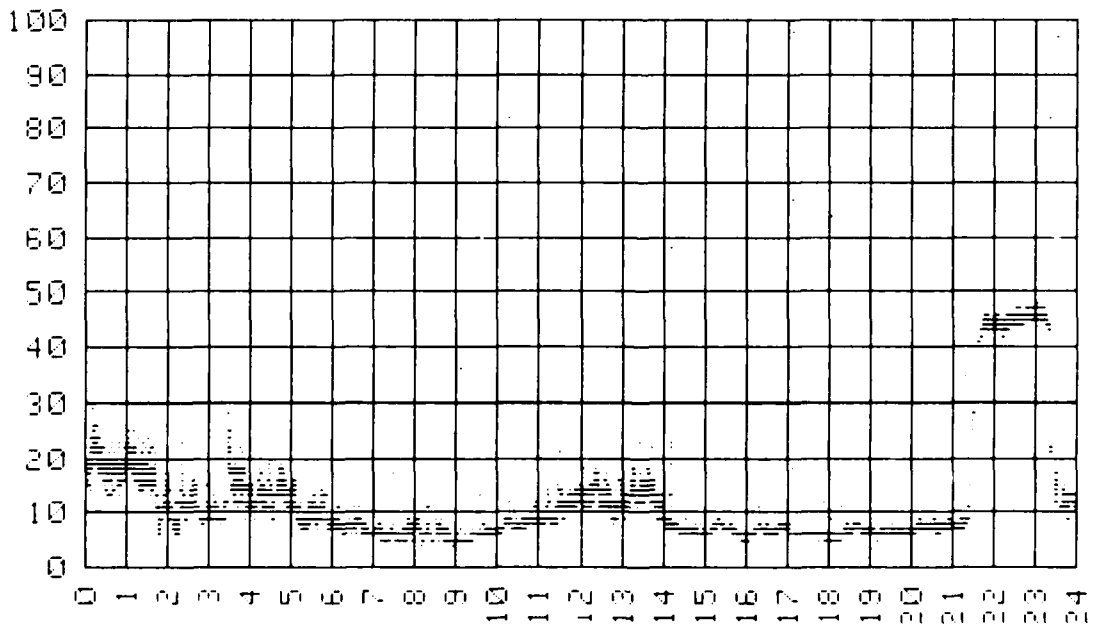

100
90
80
70
60
50
40
30
20
10
0


11.oct.1984

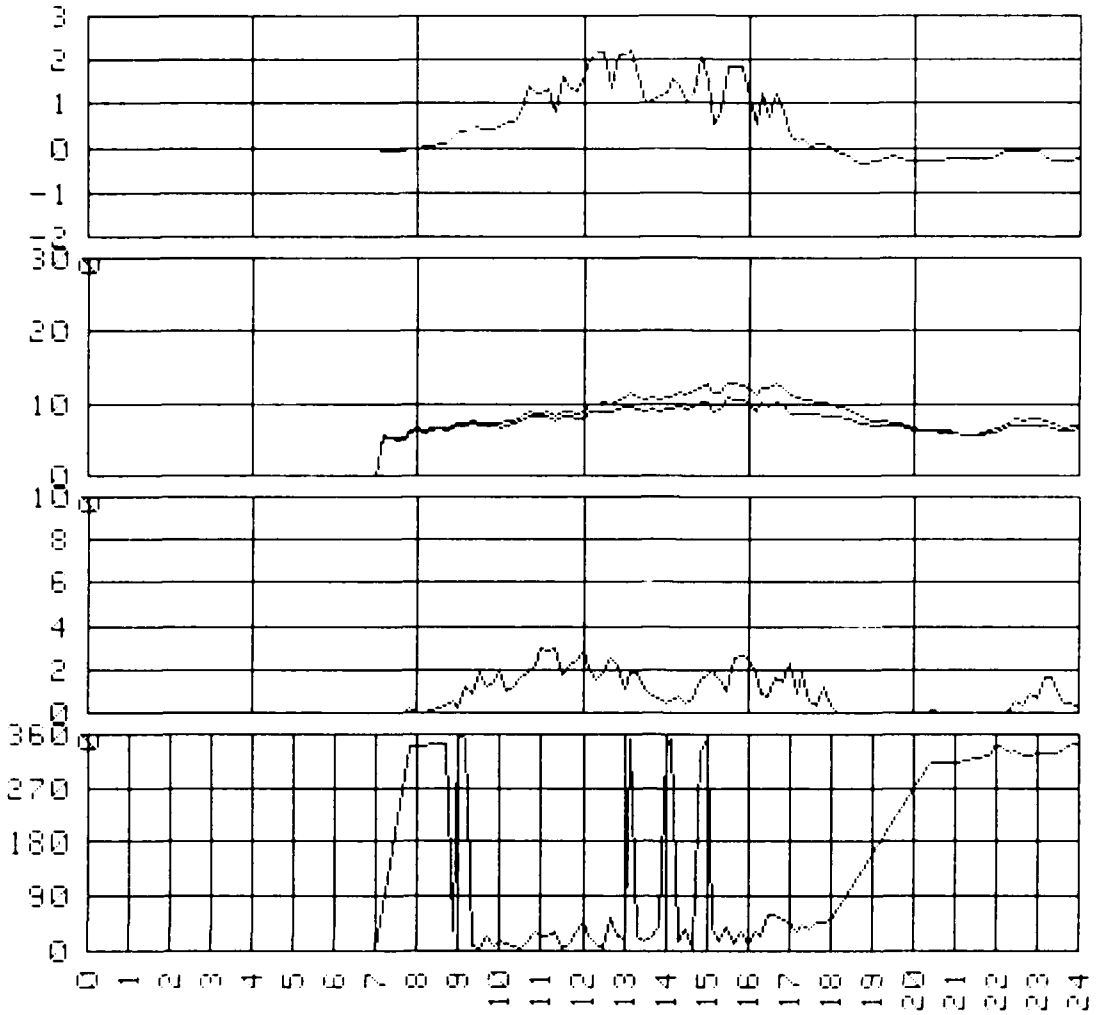


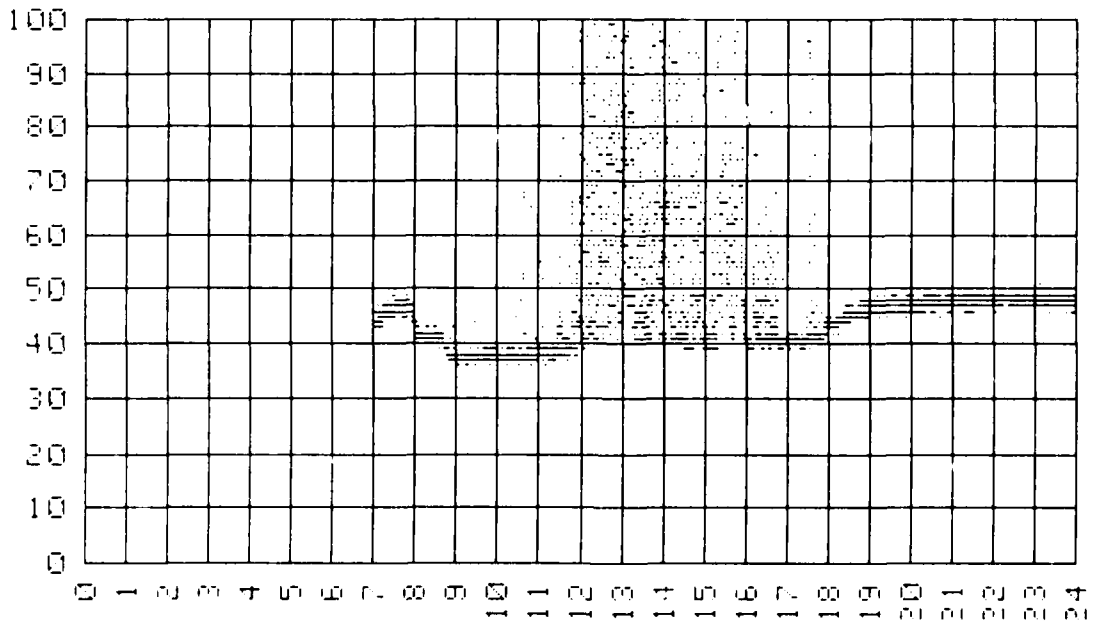

3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0

9.Oct.1984


100
90
80
70
60
50
40
30
20
10
0

8.oct.1984


3
2
1
0
-1
-2
30
20
10
0
10
8
6
4
2
0
360
270
180
90
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24


100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

4. Meteorological maps.

The weather maps of the two campagnes are attached:
1. Sept. 1. - 5.
2. Oct. 8. - 12.

```
10 ! ************************
20 !
30 ! PROGRAMM   AMI      U.GEISLER  29.5.84
40 ! MESSEN VON 5 meterol.Daten+1 Signal
50 ! Zeitabstaende sindvorzugeben
60 !
70 ! ************************
80 !
90 ASSIGN IO ":CA,:DL"
100 ! PRINTER IS ":TU"
110 !
120 !  INPUT : Standortkennung(2 Zeichen)
130 !
140 !  Mess-,Speicher-,Kopierzeiten sind zu veraendern:
150 !    in den Zeilen 1070  1080  1090
160 !
170 ! Die Matrix S ist abhaengig vom Speicherintervall Z2
180 ! zu dimensionieren:
190 !    Zeile 470 : SHORT S(x,6), x=Z2
200 !
210 !
220 ! Grenzen der Eichkurven :
230 ! in den Zeilen 660  720
240 !
250 ! Fixpunkte der Eichkurven :
260 ! in den Zeilen 830  850
270 !
280 ! Angabe der Kanalnr.und Art der Messung(Volt/Ohm)
290 ! in Zeile  610 , es bedeutet
300 !   -negative Kanalnr=Volt(DCV)
310 !   -positive Kanalnr=Ohm (TWO)
320 !
330 !
340 !
350 ! KANAL 2=Wr(Ohm      KANAL 4=Wg(Volt)
360 ! KANAL 5=Temp(Ohm)  KANAL 6=Feuchte(Ohm)
370 ! KANAL 7=Str(Volt)  KANAL 8=USA(Volt)
380 !
390   [illegible] "[illegible]mmtthh" (siehe Beschreibung)
400 !
410   ************************
[illegible]
[illegible]
[illegible]
[illegible] [illegible],[illegible] [illegible], I[[illegible]],F$[4]
[illegible]
[illegible]
[illegible] [illegible] 10 min MW, 6 Mess/min
[illegible]
[illegible]
```

```
510 REAL X1(5),X2(5),Y1(5),Y2(5),Q(5)
520 !
530 STANDBY OFF ! SYSTEM SCHALTET AUS
540 !
550 !
560 K=5 ! Anz Kanaele n u r Meteorologie
570 !
580 ! Kanalbelegung Volt/Ohm
590 !   z.B.  -3  -  "DCV3"
600 !          4  -  "TW04"
610 DATA [illegible],-4,5,6,-7
620 FOR I=1 TO K
630 READ L(I)
640 NEXT I
650 !
660 ! untere Grenzen Kanaele (Ohm/Volt)
670 DATA [illegible]
680 FOR I=1 TO K
690 READ X(I) ! untere Grenze
700 NEXT I
710 !
720 ! obere Grenzen Kanaele
730 DATA 1000,.25,220,200,1
740 FOR I=1 TO K
750 READ Y(I) ! obere Grenze
760 NEXT I
770 !
780 ! [illegible] untere Grenze USA (Volt)
790 ! [illegible] obere Grenze USA
800 !
810 ! [illegible] fuer Geradenglchg
820 ! Reihenfolge: Wr, Wh, t, f, str
830 ! 5 Wertepaare (x1/y1)
840 DATA 0,0,0,0,96.07,-10,96.07,-10,-.00152,-1
850 !
860 ! 5 Wertepaare (x2/y2)
870 DATA 1000,350,.25,32,107.79,20,107.79,20,.00152,1
880 FOR I=1 TO K
890 READ X1(I),Y1(I)
900 NEXT I
910 FOR I=1 TO K
920 READ X2(I),Y2(I)
930 NEXT I
940 !
950 ! Konstanter Quotient (Geradengl)
960 !
970 FOR I=1 TO K
980 Q(I)=(Y2(I)-Y1(I))/(X2(I)-X1(I))
990 NEXT I
1000
```

```
1010 I1=0
1020 R=662 ! bytes im Kernsp. bei PRINT(Z2=10min)
1030 I9=INT(MEM/R)-1 ! verfuegbare PRINTS
1040 IF I9<0 THEN I9=0
1050 !
1060 !      ZEITABSTAENDE
1070 !
1080 Z3=10 ! Messintervall (sec)
1090 Z2=10 ! Seicherinterval=MWBer(min)
1100 Z4=1 ! Kopierintervall (Std)
1110 !  Z4 : ganzzahl.Teil von 24 (z.B. 8)
1120 DISP "PROGRAMM  AMI" @ WAIT 1
1130 DISP "Messintervall=";Z3;" sec" @ WAIT 1
1140 DISP "Speicherintervall=";Z2;" min" @ WAIT 1
1150 DISP "Kopierintervall=";Z4;" Std" @ WAIT 1
1160 Z4=Z4*60
1170 Z5=INT(60/Z2)
1180 Z1=Z2*60
1190 !
1200 ! selbstdef.Fkt = Geradengleichung
1210 !
1220 DEF FNG(D,C) = Q(C)*(D-X1(C))+Y1(C)
1230 !
1240 !      STANDORT-EINGABE
1250 INPUT "Standort ? (2 Zeichen)";O$
1260 DISP "Speicherplatz frei fuer ca." @ WAIT 1
1270 DISP I9;" PRINTS= ";INT(I9/Z5);" Std."
1280 WAIT 2
1290 IF INT(I9/Z5)<Z4/60 THEN DISP "Kopierintervall (Z4) verkleinern!!" @ STOP
1300 !
1310 ON ERROR GOTO 1380
1320 ASSIGN # 3 TO O$&"ZZA"
1330 PRINT # 3 : Z3,Z2,Z4/60 ! Intervalle -> LAMI
1340 ASSIGN # 3 TO *
1350 COPY O$&"ZZA" TO O$&"ZZA:CA"
1360 PURGE O$&"ZZA"
1370 GOTO 1410
1380 OFF ERROR
1390 IF ERRN<>64 THEN 3140
1400 !
1410 !      LESEN UHR
1420 T=TIME ! Tageszeit (sec)
1430 M5=INT(T/60)
1440 D$=DATE$ ! yy/mm/dd
1450 T$=D$[7,8]
1460 ON ERROR GOTO 3080
1470 F1$=O$&D$[4,5]&D$[7,8] ! Filename:xxmmtt,xx=Standort
1480 ASSIGN # 1 TO F1$
1490 !
1500 F=1
```

```
1510 M6=5000
1520 !
1530 I1=0
1540 !
1550 FOR I=1 TO 6
1560 M9(I),T9(I),N9(I),S8(I)=0
1570 NEXT I
1580 M8=M+1 !
1590 M,M0,M1=2
1600 FOR I=1 TO Z2
1610 FOR J=1 TO 6
1620 S(I,J)=999 ! !nachfragen
1630 NEXT J
1640 NEXT I
1650 !
1660 !      ZEITSCHLEIFE
1670 !
1680 T=INT(TIME)
1690 IF MOD(T,Z3)<>0 THEN 1680
1700 D$=DATE$
1710 U1$=TIME$
1720 T2$=D$[7,8]
1730 M5=INT(T/60) ! Zeit (min)
1740 !
1750 IF MOD(M5,Z2)=0 AND M5<>M6 THEN 2430 ! Mw,Staw
1760 !
1770 !      Messen Signal (Z2 sec)
1780 !
1790 SENDIO ":dl","unl,lad#","dcv8"&CHR$(13)&CHR$(10)
1800 A$=ENTIO$(":DL","unl,tr:0a,tad#,sda")
1810 I=VAL(U1$[4,5])
1820 I=MOD(I,Z2)+1 ! Zeilenindex=Minute+1
1830 J=VAL(U1$[7,8])
1840 J=INT(J/10+1) ! Spaltenindex=sec+1
1850 S(I,J)=VAL(A$) ! Signal
1860 DISP S(I,J)
1870 ! IF S(I,J) G1 OR S(I,J)>G9 THEN S(I,J)=999
1880 ! DISP TIME$
1890 !
1900 !      Messen Meteorologie
1910 !
1920 FOR I=1 TO 6
1930 B$="TWO"
1940 IF L(I) 0 THEN B$="DCV"
1950 B$=B$&STR$(ABS(L(I)))
1960 SENDIO ":dl","unl,lad#",B$&CHR$(13)&CHR$(10)
1970 A$=ENTIO$(":dl","unl,tr:0a,tad#,sda")
1980 D9(I)=VAL(A$)
1990 IF I=3 OR I=4 THEN D9(I)=D9(I)-24.5
2000 !
```

```
2010 ' STOP Taste gedrückt ?
2020 '
2030 K=K+1
2040 IF K<>1 THEN 2130 ' STOP
2050
2060 '
2070 IF D9(I)<>D(I) OR D9(I)<>X(I) THEN 2130
2080 S8(I)=1
2090 '
2100 D=D9(I) @ D9(I)=FNG(D,I) ' Geradengl
2110 DIFF D9(I),I
2120 '
2130 NB=1
2140 IF S8(1)=0 THEN 2320
2150 IF S8(2)=0 THEN 2190
2160 IF S8(3)=0 THEN M0=D9(2)
2170 IF D9(1)<>D9(2) THEN 2210
2180 W=W+1
2190 S8(1)=0
2200 GOTO 2320
2210 '
2220 IF N9(1)=0 THEN 2280
2230 IF ABS(M9(1)/N9(1)-D9(1))<=180 THEN 2280
2240 IF M9(1)/N9(1)>180 THEN 2270
2250 D9(1)=D9(1)-360
2260 GOTO 2280
2270 D9(1)=D9(1)+360
2280 M9(1)=M9(1)+D9(1)*D9(2) ' Wr gewichtet
2290 S9(1)=S9(1)+D9(1)*D9(1)*D9(2)
2300 N1=N9(1)
2310 N9(1)=N9(1)+D9(2)
2320 '
2330 FOR I=2 TO K
2340 IF S8(I)=0 THEN 2390
2350 M9(I)=M9(I)+D9(I)
2360 S9(I)=S9(I)+D9(I)*D9(I)
2370 N9(I)=N9(I)+1
2380 S8(I)=0
2390 NEXT I
2400 S8(1)=0
2410 GOTO 1680 ' Zeitschleife
2420 '
2430 '      Mittelwert,Standardabw
2440 FOR I=1 TO K
2450 IF N9(I)=0 THEN M9(I),S9(I)=999 @ GOTO 2610
2460 D9(I)=M9(I)
2470 IF I<>1 THEN GOTO 2540
2480 M9(1)=M9(1)/N9(1)
2490 D9(1)=D9(1)*D9(1)/N9(1)
2500 N9(1)=N1+1
```

```
2510 IF M9(1) =0 THEN M9(1)=M9(1)+360
2520 IF M9(1) 360 THEN M9(1)=M9(1)-360
2530 GOTO 2570
2540 !
2550 M9(I)=M9(I)/N9(I)
2560 D9(I)=D9(I)*D9(I)/N9(I)
2570 V=S9(I)-D9(I)
2580 IF N9(I)<=1 THEN GOTO 2600
2590 V=V/(N9(I)-1)
2600 S9(I)=SQR(ABS(V))
2610 NEXT I
2620 !
2630 !     WINDSTILLEN, max. WIND
2640 IF W 0 THEN M9(K+1)=W
2650 IF M0 0 THEN M9(K+1)=M9(K+1)+INT(M0*100)/10^5
2660 !
2670 !
2680 !
2690 ! Doppelbelegung: INT(M9(I))=Mw
2700 !                 FRACT(M9(I))=Stabw
2710 FOR I=1 TO K
2720 B1=1
2730 M9(I)=INT(M9(I)*100)
2740 IF M9(I) 0 THEN B1=-1
2750 M9(I)=ABS(M9(I))+INT(S9(I)*100)/10^5
2760 M9(I)=M9(I)*B1
2770 NEXT I
2780 !     SPEICHERN
2790 ON ERROR GOTO 3080
2800 I1=I1+1
2810 U$=U1$[1,5]
2820 IF U$="00:00" THEN U$="24:00"
2830 PRINT # 1,I1 ; U$,M9() ! Uhr,MW/SA
2840 FOR I=1 TO Z2
2850 FOR J=1 TO 6
2860 P1(J)=S(I,J)
2870 NEXT J
2880 I1=I1+1
2890 PRINT # 1,I1 ; P1() ! USA-Signale
2900 NEXT I
2910 M6=M5
2920 !
2930 IF MOD(M5,Z4) 0 THEN 1550
2940 !
2950 !     COPY Daten  -   Band
2960 ASSIGN # 1 TO *
2970 COPY F1$ TO F1$&U$[1,2]&":CA"
2980 PURGE F1$
2990 F=0
3000 OFF ERROR
```

```
3010 IF [illegible] THEN 3000
3020 [illegible]
3030 !
3040 BYE @ DISP "** STATE PROGRAMM **"
3050 WAIT 1 @ BYE
3060 STOP
3070 !
3080 OFF ERROR
3090 IF ERRN<>95 THEN 3130
3100 BYE @ DISP "BAND VOLL !!"
3110 BYE @ DISP "RESTDATEN IN FILE:";F1$
3120 WAIT 3 @ GOTO 3040
3130 !
3140 BYE @ DISP "FEHLER!!!!!"
3150 WAIT 1 @ DISP "ERRL/ERRN:";ERRL;ERRN
3160 WAIT 5 @ GOTO 3110
3170 !
3180 !
3190 !
3200 ON ERROR GOTO 3080
3210 ASSIGN # 1 TO * @ IF I1 THEN COPY F1$ TO F1$&"99"&":CA"
3220 IF P THEN PURGE F1$
3230 BYE @ DISP "P-STOP:";DATE$;" ";U1$[1,5]
3240 WAIT 2
3250 GOTO 3040
3260 END ! **********
```

```
10 ! PROGRAMM <LAMIIB2>   22.5.84   U.GEISLER
20 !
30 ! liest Messdaten aus <AMI> mit HP75
40 ! 2.Version :
50 !    5 meteor.Daten + 1 Signal
60 !
70 ! Die Daten-Files aus <AMI> sollten n i c h t im Rechner sein
80 !
90 ! Filename: "xxmmtthh", xx=Standortkennung
100 !
110 ! RESTFILE       : hh=99
120 !
130 ! ************************
140 !
150 ASSIGN IO ":CA,:MB" ! TV"
160 ! PRINTER IS ":TV"
170 ! DISPLAY IS ":TV"
180 OPTION BASE 1
190 DELAY .5 ! DELAY FUER DISP.
200 DIM F1$[8],F2$[11],U$[5],D$[8],Z$[5]
210 DIM S$[80],S1$[80],E$[2],M$[2],T$[2],O$[2],K$[2]
220 INTEGER T,T1,T9,K,K1,Q
230 REAL M9(6),S9(5),W,M0
240 SHORT P1(6)
250 !
260 !
270 E$=CHR$(13)&CHR$(10) ! CR/LF
280 SENDIO "","IFC",""
290 SENDIO ":MB","UNL,LAD#,DCL",""
300 !
310 INPUT "STANDORT ? (2 Zeichen)";O$
320 INPUT "MONAT (mm)?";M$
330 INPUT "TAGE (1,31) ?";T1,T9
340 INPUT "KOPIERINTERVALL (hh)?";K
350 INPUT "STARTZEIT (hh)?";Q
360 !
370 Z$=O$&"ZZA"
380 COPY Z$&":CA" TO Z$
390 ASSIGN # 3 TO Z$
400 READ # 3 ; Z3,Z2,Z4 ! Intervalle -> LAMI -> AMIST$
410 PURGE Z$
420 S$=""
430 S$=STR$(Z3)&E$&STR$(Z2)&E$&STR$(Z4)&E$
440 SENDIO ":MB","UNL,LAD#",S$
450 WAIT 1 !
460 S$=""
470 T=T1-1
480 K1=Q-K
490 !
500 T=T+1 ! naechster Tag
```

```
510 T$=STR$(T)
520 IF T<10 THEN T$="0"&T$
530 !
540 D$=O$&M$&T$
550 SENDIO ":MB","UNL,LAD#",D$&E$
560 K1=K1+K
570 K$=STR$(K1)
580 IF K1<10 THEN K$="0"&K$
590 !
600 !
610 F1$=D$&K$
620 F2$=F1$&":CA"
630 ON ERROR GOTO 1010
640 COPY F2$ TO F1$
650 DISP "FILE=";F1$ @ WAIT 1
660 ASSIGN # 5 TO F1$
670 !
680 I1=0
690 !
700 I1=I1+1
710 READ # 5,I1 ; U$,M9()
720 DISP U$&"  ";
730 W=IP(M9(6)) @ M0=FP(M9(6))*10^5/100
740 S$=""
750 S$=U$&E$&STR$(W)&E$&STR$(M0)&E$
760 SENDIO ":MB","UNL,LAD#",S$
770 S$="" @ S1$=""
780 FOR C=1 TO 5
790 S9(C)=FP(ABS(M9(C)))*10^5/100
800 M9(C)=IP(M9(C))/100
810 S$=S$&STR$(M9(C))&E$
820 S1$=S1$&STR$(S9(C))&E$
830 NEXT C
840 DISP USING 850 ; M9(1),M9(2),M9(3),M9(4),M9(5),W,M0
850 IMAGE 3(5D.DD)/2(5D.DD)/DD,5D.D
860 !
870 SENDIO ":MB","UNL,LAD#",S$ ! Mw
880 SENDIO ":MB","UNL,LAD#",S1$ !  Stabw
890 FOR C=1 TO 22
900 I1=I1+1 @ S$=""
910 READ # 5,I1 ; P1()
920 !
930 FOR C1=1 TO 6
940 S$=S$&STR$(P1(C1))&E$
950 NEXT C1
960 SENDIO ":MB","UNL,LAD#",S$ ! Signale
970 NEXT C
980 !
990 GOTO 700
1000 !
```

```
1010 OFF ERROR
1020 IF ERRN<>62 THEN 1090
1030 ! File fehlt :
1040 IF F1$[7,8]="99" THEN 1150 ! naechster Tag
1050 PRINT "FILE NICHT DA: ";F1$
1060 IF F1$[7,8]<>"24" THEN 1140
1070 K$="99" @ GOTO 600
1080 !
1090 IF ERRN<>34 THEN 1260
1100 ON ERROR GOTO 1260
1110 ! FILE ZU ENDE:
1120 DISP F1$[7,8];" Uhr fertig"
1130 PURGE F1$
1140 IF K1<24 THEN 560
1150 K1=0
1160 S$="99.99"&E$&"0"&E$&"0"&E$ ! Tag zu Ende
1170 SENDIO ":MB","UNL,LAD#",S$
1180 IF T<T9 THEN 500
1190 PRINT
1200 PRINT "Uebertrag beendet fuer Monat ";M$
1210 PRINT "Tag ";T1;"-";T ! TAB(22)
1220 S$="9999"&E$&"0"&E$&"0"&E$
1230 SENDIO ":MB","UNL,LAD#",S$ ! Uebertr. zu Ende
1240 STOP
1250 !
1260 PRINT "ERRL/ERRN:";ERRL;ERRN
1270 STOP
1280 END ! **********************
```

```
10     !  PROGRAMM    AMIST$>       U.GEISLER                28.5.1984
20     !  UMWANDLUNG VON DATEN EINES "  AMI - LAMIIB2  " DATENSATZES IN
30     !  STRINGS MIT 2* 128 BYTES (METEOROLOGIE + SIGNALE )
40     !  ZUR WEITERVERARBEITUNG MIT   HP - IBM - ROUTINE.
50     !
60     !
70     !
80     OPTION BASE 1
90     DIM S1$[128],S2$[128],F$[6],Y$[2]
100    DIM Uhr$(144)[5],U$[5],U2$(144)[5]
110    SHOPT M(144,5),S(144,5),Umax(144),Wstille(144),Sig(10,6),Signal(144,10,6),
Z
120    INTEGER Dim,Ii,I,J,Am(5),Em(5),As(5),Es(5),Pm(5),Ps(5)
130    INTEGER A1,A2,Ap1,Ap2,Zm,Z2,Min,Sec
140    !
150    !
160    ! REIHENFOLGE :  Wr, Wg, t, f, str
170    DATA 14,21,30,39,48
180    MAT READ Am                                  ! ANFANGSPUNKTE MW
190    DATA 16,24,33,42,51
200    MAT READ Em                                  ! ENDPUNKTE MITTELWERTE
210    DATA 17,25,34,43,52
220    MAT READ As                                  ! ANFANGSPKTE STANDARDAW.
230    DATA 20,28,37,46,55
240    MAT READ Es                                  ! ENDPKTE Sw
250    !
260    DATA 0,-1,-1,-1,-2
270    MAT READ Pm                                  ! PROUND MITTELWERTE
280    DATA -1,-1,-1,-1,-2
290    MAT READ Ps                                  ! PROUND STANDARDABW
300    !
310    T14$=":H7 "                                  ! AUSGABEFILE (STRINGS)
320    T15$=":H7 "                                  ! EINGABEFILE
330    A1=60                                        ! Anfang Signale in S1$
340    A2=14                                        ! Anfang Signale in S2$
350    Ii=0
360    PRINTER IS 16
370     PRINT CHR$(27)&"E"                          ! CLEAR SCREEN
380    PRINT "PROGRAMM  < AMIST$ >"
390    INPUT " FILENAME (mmttxx)?",F$
400    INPUT " JAHR AKTUELL (yy)",Y$
410    ON ERROR GOTO Err1
420    ASSIGN #1 TO F$&T15$                         ! EINGABEFILE
430    ASSIGN #5 TO F$[1,4]&"SS"&T15$
440    ASSIGN #2 TO F$[5,6]&"ZZA"&T15$
450    READ #2;Zm,Z2,Z4
460    ASSIGN #2 TO *
470    Dim=60/Z2*24    ! rec/Tag
480    !
490    REDIM Uhr$(Dim),Sig(Z2,6),Signal(Dim,Z2,6),U2$(Dim)
500    REDIM M(Dim,5),S(Dim,5),Umax(Dim),Wstille(Dim)
510    !
520    ON ERROR GOTO Error
530    F1$=F$[1,4]&LWC$(F$[5,6])
540    PRINT "NEUER FILENAME (STRINGS) : ";F1$
550    CREATE F1$&T14$,Dim+3,260      !READ #3;S1$&S2$    ! 2*DIM[128]
560    ASSIGN #3 TO F1$&T14$                        ! AUSGABEFILE
570    S1$=S2$=RPT$("*",128)
580    INPUT " TITEL ? (MAX 30)",S1$[1,30]
590    INPUT " LOCATION (MAX12) ",S1$[31,42]
600    INPUT " KOORD.:NORTH4(4),EAST(4)",S1$[43,46],S1$[47,50]
```

```
610   INPUT " SPECIAL REM. (30)",S1$[51,80]
620   PRINT S1$[1,80]
630   INPUT " EINGABE O.K. (J/N)",J$
640   IF J$<>"J" THEN 570
650   PRINT #3;S1$&S2$
660   S1$="MXXJJMMTThhmmDDDdd.dVV.Vvv.v-TT.Ttt.t-FF.Fff.f-P.PPr.rrhhmmssssssssss
ssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss"
670   S2$="SXXJJMMTThhmmssssssssssssssssssssssssssssssssssssssssssssssssssssssss
ssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssssss"
680   PRINT #3;S1$&S2$
690   S1$=S2$=RPT$("*",124)
700   !
710   S1$[1,1]="M"
720   S2$[1,1]="S"
730   S1$[2,3]=S2$[2,3]=F$[5,6]                                    ! STANDORT
740   S1$[4,5]=S2$[4,5]=Y$                                         ! JAHR
750   S1$[6,9]=S2$[6,9]=F$[1,4]                                    ! mmtt
760   !
770   MAT READ #1;Uhr$,Wstille,Umax,M,S
780   FOR R=1 TO Dim
790   IF Uhr$(R)="-----" THEN 910
800   Z=VAL(Uhr$(R)[1,2])
810   Z=60/Z2*Z+VAL(Uhr$(R)[4,5])/Z2
820   READ #5,Z;U2$(R),Sig(*)   !SIGNALE
830   IF U2$(R)<>Uhr$(R) THEN Fehler
840   FOR Min=1 TO Z2
850   FOR Sec=1 TO 6
860   Signal(R,Min,Sec)=PROUND(Sig(Min,Sec)*100,0)
870   IF Sig(Min,Sec)=999 THEN Signal(R,Min,Sec)=999
880   IF Signal(R,Min,Sec)=999 THEN Signal(R,Min,Sec)=-999
890   NEXT Sec
900   NEXT Min
910   NEXT R
920   MAT Signal=(-1)*Signal
930  ! MAT PRINT Uhr$;M;S
940   FOR I=1 TO 8
950   PRINT "1234567890";
960   NEXT I
970   PRINT S1$[10,89]
980    FOR J=1 TO Dim
990    IF Uhr$(J)="-----" THEN Next J
1000  S1$[10,13]=S2$[10,13]=Uhr$(J)[1,2]&Uhr$(J)[4,5]
1010  !
1020  !  M(J,1)=Wr , M(J,2)= Wg M(J,3)=Temp, M(J,4)=Feuchte M(J,5)= Strahlung
1030  !
1040  S1$[14,128]=RPT$("9",115)
1050  S2$[14,124]=RPT$("9",111)
1060  S1$[29,29]=S1$[38,38]=S1$[47,47]=" "
1070  !
1080  IF M(J,3)<0 THEN S1$[29,29]="-"
1090  IF M(J,4)<0 THEN S1$[38,38]="-"
1100  IF M(J,5)<0 THEN S1$[47,47]="-"
1110  FOR K=1 TO 5
1120  ! PRINT M(J,K),S(J,K)
1130  IF M(J,K)=999 THEN 1180
1140  Z=PROUND(M(J,K),Pm(K))
1150  S1$[Am(K),Em(K)]=VAL$(ABS(Z))
1160  Z=PROUND(S(J,K),Ps(K))
1170  S1$[As(K),Es(K)]=VAL$(Z)
1180  NEXT K
1190  !
1200  Z=VAL(S1$[10,13]) ! Ende Messung
```

```
1210  Z=Z-10+1              ! Anfang Messung
1220  IF S1$[12,13]="00" THEN Z=Z-40
1230  S1$[56,60]=VAL$(Z)
1240  IF Z<1000 THEN S1$[56,60]="0"&S1$[56,59]
1250  Ap1=A1
1260  Ap2=A2
1270  FOR Min=1 TO Z2
1280  FOR Sec=1 TO 6
1290  IF Ap1>126 THEN S2
1300  S1$[Ap1,Ap1+2]=VAL$(Signal(J,Min,Sec))
1310  Ap1=Ap1+3
1320  GOTO 1350
1330 S2:  S2$[Ap2,Ap2+2]=VAL$(Signal(J,Min,Sec))
1340  Ap2=Ap2+3
1350  NEXT Sec
1360  NEXT Min
1370  I1=I1+1
1380  PRINT #3;S1$&S2$                    ! LÄNGE IM FILE KONTROLLIEREN
1390  PRINT S1$&S2$                       ! TEST
1400  S1$[10,13]=S2$[10,13]="    "
1410 Ne xt J:  NEXT J
1420  !
1430  ASSIGN * TO #3
1440  PRINT I1;" Strings A 256 BYTES UBERTRAGEN"
1450  STOP
1460  !
1470 Err1:  !
1480  OFF ERROR
1490  IF ERRN<>56 THEN 1560
1500  PRINT LIN(5),"FILENAME PRUFEN!"
1510  GOTO 390
1520  !
1530 Error: !
1540  OFF ERROR
1550  IF ERRN=54 THEN 560                 ! FILE WAR SCHON DA
1560  DISP "ERRN ERRL:";ERRL;ERRN
1570  GOTO 1440
1580  !
1590 Fehler:    !
1600  PRINT LIN(5),P;" te Uhrzeit stimmt nicht uberein:"
1610  PRINT U2$(P);"   ";Uhr$(P)
1620  STOP
1630  END
```

```
10     !  PROGRAMM "LUSA"<=>"lusaib"                    GEISLER 22.5.84
20     !  PROGRAMM ZUR ÜBERTRAGUNG DER USA-DATEN VOM 75 IN DEN 45
30     !  SPEICHERN : 1 TAG = 1 FILE
40     !  FILE WIRD IM PROGRAMM ANGELEGT
50     !  data-transfer hp 71/75 to hp 45 via hp-ib-interface
60     OPTION BASE 1
70     DIM Datum$[10],U$[5],Tfile$[8],T$[15],Year$[2]
80     DIM Uhr$(288)[5]                          ! 10 MIN Mw => 6 rec/Std =144 rec/Tag
90     INTEGER Zm,Z2,Dim
100    SHORT M(8),S(8),U0,U9
110    SHORT Mittel(288,8),Standard(288,8),Wstille(288),Umax(288)
120    RESET 700
130    T15$=":T15"
140    Year$="84"    ! JAHR aktuell
150    !
160    DISP " ZUERST HP 75 STARTEN, VOR STANDORTEINGABE => CONT "
170    PAUSE
180    DISP CHR$(12)
190    WAIT 1000
200
210    ENTER 700 USING "+,3(F)";Zm,Z2,24
220    Zh=60/Z2     ! rec/Std.
230    Dim=Zh*24    ! rec/Tag
240    REDIM Uhr$(Dim)
250    REDIM Mittel(Dim,8),Standard(Dim,8),Umax(Dim),Wstille(Dim)
260 Anfang:  !
270    Tfertig=0
280    MAT Mittel=(0)
290    MAT Standard=(0)
300    MAT Wstille=(0)
310    MAT Umax=(0)
320    FOR C=1 TO Dim
330    Uhr$(C)="-----"
340    NEXT C
350    !
360    PRINTER IS 16
370    PRINT "DATEN AUS PROGRAMM  < USA >"
380    !
390    PRINT
400    GOSUB Kopf
410    IF Mfertig THEN Ende
420    GOSUB Einlesen
430    IF Tfertig THEN Teilende
440    GOSUB Print
450    GOTO 420
460    !
470 Kopf:  !
480    !
490    ENTER 700 USING "+,T";Datum$
500    IF Datum$="9999" THEN 670      ! Datum$="XXmmttHH" , XX=STANDORT
510    Tag=VAL(Datum$[5,6])
520    Tfile$=Datum$[3,6]&Datum$[1,2]
530    ON ERROR GOTO Err1
540    CREATE Datum$[1,2]&"Z2"&T15$,1,20
550    ASSIGN #4 TO Datum$[1,2]&"Z2"&T15$
560    PRINT #4;Zm,Z2,24
570    ASSIGN #4 TO *
580    ON ERROR GOTO 690
590    CREATE Tfile$&T15$,1,13+Dim+4+Dim+4+Dim+4+8+Dim+4+8+Dim
600    ON ERROR GOTO Error
```

```
610   PRINTER IS 16
620   PRINT USING 630;"MESSDATEN STATION"," : ",Tfile$[5,6],Tfile$[3,4],".",Tfi
le$[1,2],".",Year$
630   IMAGE 15X,17A,3A,2A,3X,2A,A,2A,A,2A
640   PRINT USING 650;"Uhr","*  U=0","Umax","dd","U","Temp","ff","ppp","RaB","Sg
1","Sg2"
650   IMAGE /5X3A,3X6A,2X4A,3X2A,4XA,5X4A,4X2A,5X3A,2X3A,3X3A,4X3A
660   RETURN
670   Mfertig=1
680   RETURN
690   OFF ERROR
700   IF ERRN<>54 THEN GOTO 1200
710   GOTO 600
720   !
730 Einlesen:  !
740   !
750   ENTER 700 USING "+,T,F,F";U$,U0,U9
760   IF U$="99.99" THEN 890
770   ENTER 700 USING "+,8(F)";M(*)
780   ENTER 700 USING "+,8(F)";S(*)
790   Z=VAL(U$[1,2])
800   Z=Zh*Z+VAL(U$[4,5])/Z2              ! UMWANDLUNG UHRZEIT IN INDEX
810   Uhr$(Z)=U$
820   Wstille(Z)=U0
830   Umax(Z)=U9
840   FOR C=1 TO 8
850   Mittel(Z,C)=M(C)
860   Standard(Z,C)=S(C)
870   NEXT C
880   RETURN
890   Tfertig=1
900   RETURN                                !***                  ***
910   !
920 Print:  !
930     PRINT USING "#,5X5A,3A,DDZ,X2DZ.D";U$," * ",U0,U9
940     PRINT USING 950;M(*)
950     IMAGE 3XDDZ,3(2X2DZ.D),3X3DZ,XXDDZ,2(3XZ.DD)
960     PRINT USING 970;"*",S(*)
970     IMAGE 11X,A,13X,DDZ,3(2X2DZ.D),3X3DZ,XXDDZ,2(3XZ.DD)
980   RETURN
990   !
1000 Teilende: !
1010  !
1020  PRINT LIN(2)
1030  DISP Tfile$;" wird gespeichert"
1040  WAIT 3000
1050  ASSIGN #1 TO Tfile$&T15$
1060  MAT PRINT #1;Uhr$,Wstille,Umax,Mittel,Standard
1070  ASSIGN * TO #1
1080  DISP CHR$(12)
1090  GOTO Anfang
1100  !
1110 Ende: !
1120  DISP " Fertig"
1130  STOP
1140 Err1:   !
1150  OFF ERROR
1160  IF ERRN=54 THEN 580
1170 Error:    !
1180  OFF ERROR
1190  IF ERRN=56 THEN 1220
1200  DISP "ERRL/ERRN";ERRL;ERRN
```

END

FILMED

3-85

DTIC